

MOTOR AGE

A Chilton Class Journal Publication
Published Weekly April 5, 1928

A Buying wave



that sweeps away all records

.... *Value* the reason of course

Sales that surpass all records for this time of the year; outselling all other cars at many points, and gaining momentum at a speed that astounds the trade, the new Essex Super-Six is enjoying the greatest public ovation in 6-cylinder history.

Everywhere dealers are report-

ing more than 100% greater sales than for the same period last year which was the previous record.

It is easily the greatest Essex Super-Six in history. It offers \$200 to \$300 more visible value than its great predecessor which outsold any other "Six" at or near the price by overwhelming margins.

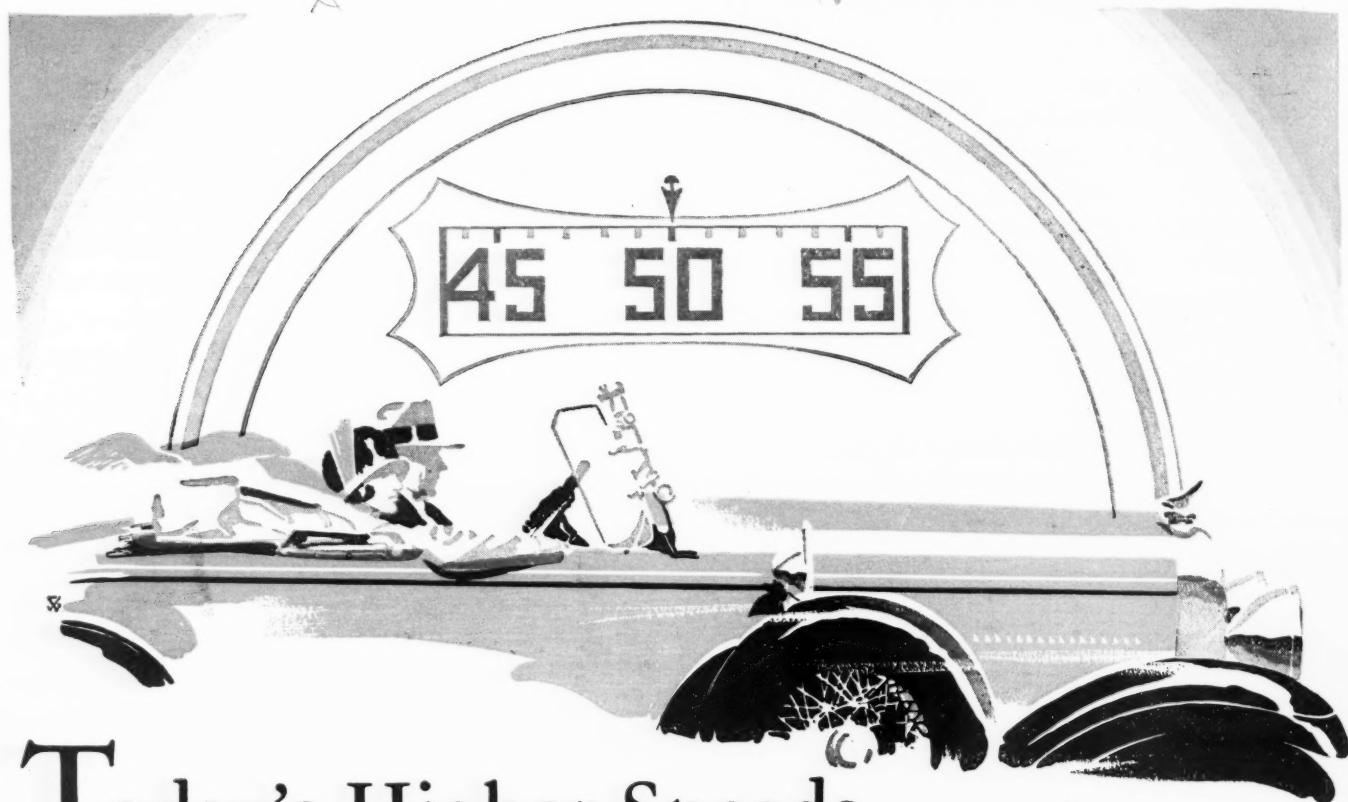
COUPE \$745 (Rumble Seat \$30 extra) - SEDAN (4-door) \$795 - COACH \$735

All prices f. o. b, Detroit, plus war excise tax

ESSEX Super-Six

HUDSON MOTOR CAR COMPANY, Detroit, Mich.

JAR 1.532 Ap-Jc '28



Today's Higher Speeds...

Make PERFECT CIRCLES Even *More Important*

WHETHER a car is loafing at twenty... or stepping along at fifty or more—PERFECT CIRCLES take good care of the motor... supplying the cylinder walls and pistons with *all* the oil they need, yet saving every drop that isn't actually required.

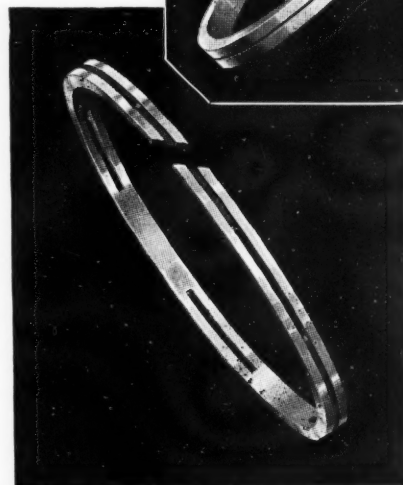
... ..

PERFECT CIRCLE national advertising is telling the car owner why today's higher speed, faster-driven motors need the protection of PERFECT CIRCLES more than ever before—and how PERFECT CIRCLES provide thorough lubrication and honest oil-mileage at *every* speed.

So, when the car owner comes to you for new rings... he's going to expect piston ring performance that not only prevents oil-pumping, but also furnishes thorough lubrication of the cylinder walls, regardless of speed. PERFECT CIRCLES do *both*. Make *sure* of satisfying your customers... replace with PERFECT CIRCLES.

THE PERFECT CIRCLE COMPANY, Hagerstown, Ind.

Compression
Type, 30c



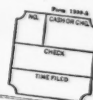
Oil-Regulating
Type, 60c
PAT. MAY 2, 1922

And to make sure the motor produces all the power it is capable of delivering... install PERFECT CIRCLE Compression rings. They hold compression and prevent Blow-by.

PERFECT CIRCLE PISTON RINGS

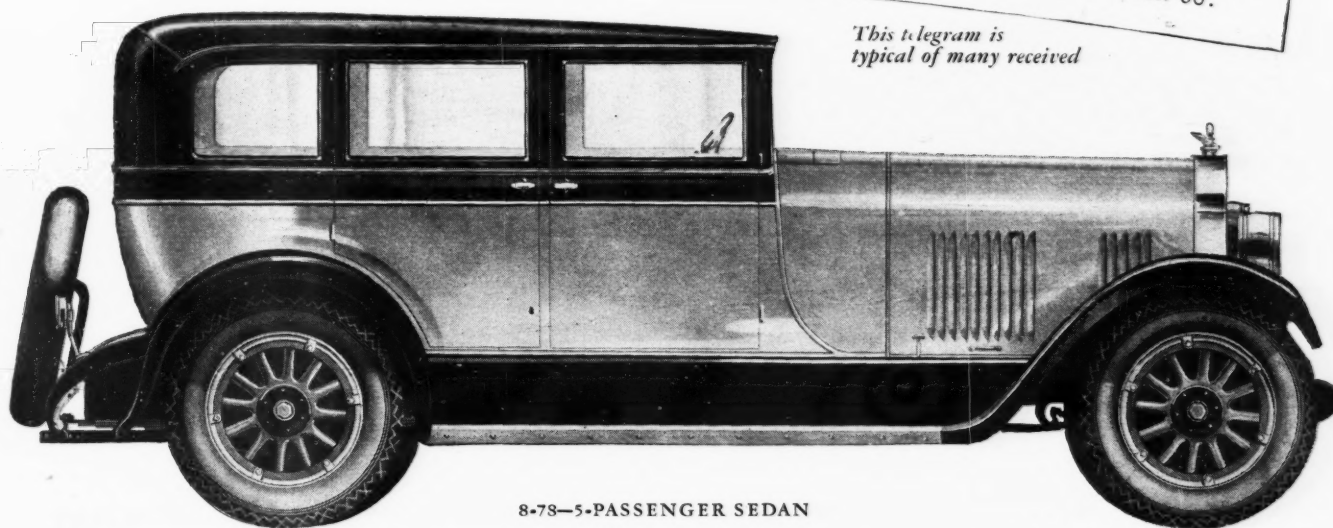
AH
Tuck

Dealers delighted with ELCAR 8-78


**WESTERN
UNION**


C 51 C A K - SUPERIOR, WISC. 17
ELCAR MOTOR COMPANY
ELKHART IND.
EIGHT SEVENTY EIGHT UNLOADED
AND ON DISPLAY IT FAR EXCEEDS
OUR EXPECTATIONS AND WE
CONGRATULATE YOU WE ARE
LOOKING FOR A BIG YEAR
CARLSON MOTOR CO.

*This telegram is
typical of many received*



8-78-5-PASSENGER SEDAN



Success for ELCAR 8-78! Crowds at the Shows acclaimed it. Dealers and motorists heartily welcomed this sensational Eight, with its style-beauty, its super-mechanism, its *Shock-less Chassis*, its amazing price! This popularity spells opportunity—foretells a profit year for ELCAR dealers. 22 superb ELCARS—\$1295 and up, F. O. B. Elkhart. Price range meets every demand in the over-\$1000 class. ELCAR's *Shock-less Chassis* has 12 features that insure easy riding, silent operation, long-wear service.

Elcar models 8-91 and 8-92 now have the new Elcar Lycoming motor, developing 115 horse power

*Get the facts about our Franchise. Liberal discounts,
valuable selling aid. Write or wire today.*

The Year's Greatest Value

Travel Air ELCAR
8-78 Sedan

\$1395

Freight, tax and special equipment extra

- 123-inch wheel base
- Lycoming Motor, 8-in-line
- ELCAR-built body

8-78 series includes

- 5-Pass. Sedan 4-Pass. Coupe
- 5-Pass. Touring 4-Pass. Roadster

TRAVEL
AIR

ELCAR

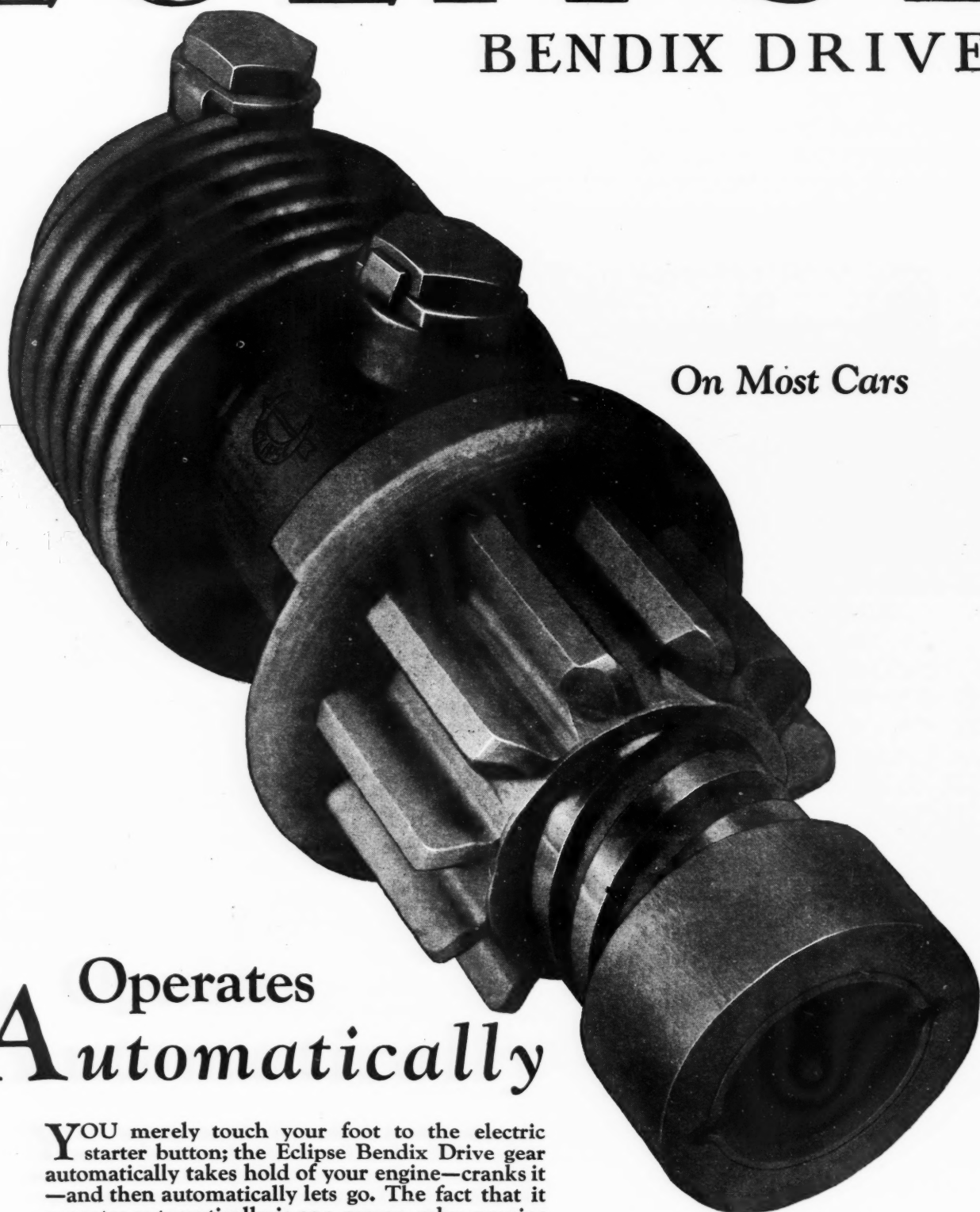
WITH
THE

Shock-less Chassis

ELCAR MOTOR COMPANY Builders of Fine Vehicles Since 1873 ELKHART, INDIANA

ECLIPSE

BENDIX DRIVE



On Most Cars

Operates *Automatically*

YOU merely touch your foot to the electric starter button; the Eclipse Bendix Drive gear automatically takes hold of your engine—cranks it—and then automatically lets go. The fact that it operates automatically is one reason why *genuine* parts, which are the same as the original parts should be used when making replacements. You can obtain these parts from a nearby distributor. Insist on getting the genuine.

Approximately Twice Actual Size

ECLIPSE MACHINE COMPANY, ELMIRA, N. Y.
Eclipse Machine Co., East Orange, N. J. ❖ ❖ Eclipse Machine Co., Ltd., Walkerville, Ont.

MOTOR AGE

Vol. LIII

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Established 1899

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CONTENTS

News of the Industry and Trade	9
What's Coming in Motordom	15
Dibble-Gabble. By Lewis C. Dibble	16
Gas, Oil and Hot Dogs—Drive In	22
John Cleary Says—	22
Doors—In, Out and Garage	23
A Used-Car Certificate Contest. By John Cleary	24
Toll Bridge Taboo is Automotive Goal. By Norman G. Shidle	26
Will Smithers Puts His Home on a Business Basis. By Sherman Swift	30
A MOTOR AGE Impression of Joseph B. Graham. By Pete Keenan	33
Camp on the Trail of the Campers, By Ernest A. Dench	34
The Giant of the Industry Snoozes. By L. E. Gier	36
About Aluminum Pistons and Invar Struts	39
Southern Dealer Plans to Build on Hillside. By Tom Wilder	40
Readers' Clearing House. By C. Edward Packer	42
The Latest in Equipment for the Automotive Service Shop	46
The Newest in Automotive Accessories and Equipment	48
Purrs and Pings	50
Prices and Weights of Current Passenger Car Models	51
Mechanical Specifications of Current Passenger Car Models	54
Advertisers' Index	83

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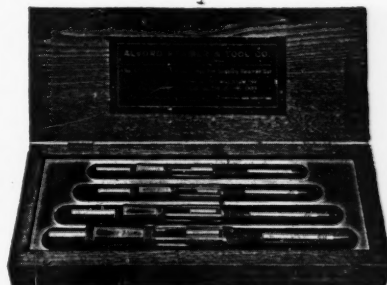
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ALVORD POLK

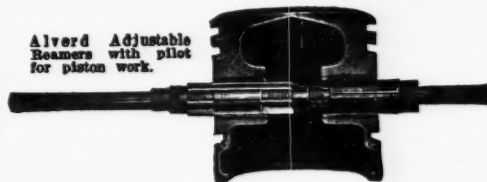
Anything you
need in tools

Piston Pin Reamers

Consisting of Reamers
Nos. 50, 51, 52, 53.
Reams the Piston Pin
Bushings of all leading
cars. Lists at \$36.00.



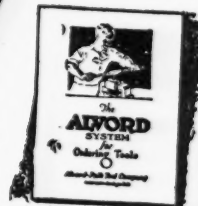
Alvord Adjustable
Reamers with pilot
for piston work.



Valve Seat Reamer Set

Contains one 45 degree reamer for seats
1 1/4 to 3 1/4 inch diameter. One 15 degree
reamer for seats 1 1/4 to 3 1/4 inch diameter.
One 75 degree reamer for seats 1 1/4 to 3
inch diameter. Ten pilot stems sized to
fit every possible need.

In the opin-
ion of many,
the finest ad-
justable
reamer made.
Cuts smooth,
perfect holes.
Straight and
"sheer cut"
blades.



The new catalog includes
complete Alvord-Polk line
and full information on
all types and sizes of
cutting tools.

Your Jobber Carries Them!

ALVORD POLK

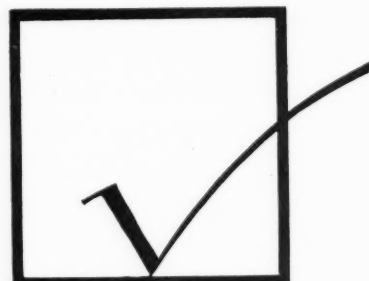
TOOLS FOR REPAIR SHOPS

Alvord-Polk Tool Company
Millersburg Pennsylvania

If... You Want a Catalog or Literature

The Size or Price of Any Garage
Equipment or Parts or Anything
Automotive that Interests You—

Just Ask Us!



Come to Automotive Headquarters!

If you are interested in information about shop equipment, tools, replacement parts, accessories, etc., check them in the squares below, and MOTOR AGE will see that data are forwarded you promptly. By taking advantage of this service, you do not obligate yourself in any way—nor are you signing an order for anything.

If you want catalogs or literature—just ask us. This is the old established MOTOR AGE “Clearing House” service, made easier for you.

Tear Off the Coupon—Check the Items—Information Will Follow

MAIL TO

Motor Age

Chestnut and 56th Sts., Philadelphia, Pa.

I want catalogs or literature about the “Clearing House” items checked below. This inquiry is not an order, nor does it obligate me in any way.

Equipment and Tools	<input type="checkbox"/> Drills, electric	<input type="checkbox"/> Steam cleaning equipment	Replacement Parts	Shop Supplies
<input type="checkbox"/> Air compressors	<input type="checkbox"/> Drills, twist	<input type="checkbox"/> Tanks, parts cleaning	<input type="checkbox"/> Armatures, rewound	<input type="checkbox"/> Babbitt metal
<input type="checkbox"/> Aligners, piston and rod	<input type="checkbox"/> Engine stands	<input type="checkbox"/> Torches, blow	<input type="checkbox"/> Axle shafts	<input type="checkbox"/> Cement, gasket
<input type="checkbox"/> Aligners, wheel	<input type="checkbox"/> Fender tools	<input type="checkbox"/> Vulcanizers	<input type="checkbox"/> Bearings, ball	<input type="checkbox"/> Cement, rubber
<input type="checkbox"/> Bearing finishers	<input type="checkbox"/> Gages	<input type="checkbox"/> Washers, car	<input type="checkbox"/> Bearings, replaceable	<input type="checkbox"/> Cement, iron
<input type="checkbox"/> Bearing babbitting equipment	<input type="checkbox"/> Grinders, bench	<input type="checkbox"/> Washers, lock	<input type="checkbox"/> Brake lining	<input type="checkbox"/> Cement, radiator
<input type="checkbox"/> Benches, work	<input type="checkbox"/> Grinders, crankshaft	<input type="checkbox"/> Welding equipment & supplies	<input type="checkbox"/> Bushings	<input type="checkbox"/> Cleaners, floor
<input type="checkbox"/> Benches, electric test	<input type="checkbox"/> Grinders, flexible shaft	Small Tools	<input type="checkbox"/> Cable, battery	<input type="checkbox"/> Covers, fender and upholstery
<input type="checkbox"/> Bins, parts, steel	<input type="checkbox"/> Grinders, valve	<input type="checkbox"/> Clamps	<input type="checkbox"/> Chains, timing	<input type="checkbox"/> Flux, soldering or babbitting
<input type="checkbox"/> Brake reliner	<input type="checkbox"/> Guns, grease	<input type="checkbox"/> Files	<input type="checkbox"/> Facings, clutch	<input type="checkbox"/> Hacksaw blades
<input type="checkbox"/> Brake tester	<input type="checkbox"/> Hoists, shop	<input type="checkbox"/> Gages, dial	<input type="checkbox"/> Gaskets	<input type="checkbox"/> Packing, pump
<input type="checkbox"/> Brushes, wire	<input type="checkbox"/> Hoists, wrecking	<input type="checkbox"/> Gages, feeler	<input type="checkbox"/> Gears, rear axle	<input type="checkbox"/> Rod, welding and brazing
<input type="checkbox"/> Carbon burning equipment	<input type="checkbox"/> Horses, shop	<input type="checkbox"/> Hammers	<input type="checkbox"/> Gears, timing	<input type="checkbox"/> Paper, emery and sand
<input type="checkbox"/> Chargers, battery	<input type="checkbox"/> Jacks, dolly	<input type="checkbox"/> Micrometers	<input type="checkbox"/> Gears, ring	<input type="checkbox"/> Solder
<input type="checkbox"/> Cleaners, engine	<input type="checkbox"/> Lathes	<input type="checkbox"/> Pliers	<input type="checkbox"/> Ignition parts	Accessories
<input type="checkbox"/> Compound, grinding	<input type="checkbox"/> Lubricators, pressure	<input type="checkbox"/> Reamers, expanding	<input type="checkbox"/> Muffler	<input type="checkbox"/>
<input type="checkbox"/> Crankshaft returning tool	<input type="checkbox"/> Metal bumping tools	<input type="checkbox"/> Reamers, valve	<input type="checkbox"/> Pistons	<input type="checkbox"/>
<input type="checkbox"/> Cutters, bolt	<input type="checkbox"/> Paint spray equipment	<input type="checkbox"/> Screw Plate sets	<input type="checkbox"/> Piston pins	<input type="checkbox"/>
<input type="checkbox"/> Dies	<input type="checkbox"/> Presses	<input type="checkbox"/> Taps, screw & pipe	<input type="checkbox"/> Plates, clutch	<input type="checkbox"/>
<input type="checkbox"/> Drain pans, oil	<input type="checkbox"/> Pullers, bushing	<input type="checkbox"/> Tire tools	<input type="checkbox"/> Rings, inner	<input type="checkbox"/>
<input type="checkbox"/> Drill press	<input type="checkbox"/> Pullers, wheel and gear	<input type="checkbox"/> Wrenches	<input type="checkbox"/> Rings, piston	<input type="checkbox"/>
	<input type="checkbox"/> Reamers, line		<input type="checkbox"/> Shims	<input type="checkbox"/>
	<input type="checkbox"/> Reboring equipment		<input type="checkbox"/> Valves	<input type="checkbox"/>
	<input type="checkbox"/> Soaps, car washing		<input type="checkbox"/> Wire, ignition	<input type="checkbox"/>
	<input type="checkbox"/> Soldering coppers		<input type="checkbox"/> Wire, primary	<input type="checkbox"/>

Name Street and No.

City State

Studebaker dealers have a car to sell to every type of buyer!

AS a Studebaker dealer you can make your profits from every class of motor car demand in your community. You have automobile merchandise of championship calibre to offer in every price division — and each priced *under* competitive lines. It's easy to understand why dealers in Studebaker-Erskine cars are consistently prosperous — why retail deliveries for January were the largest in history — why February of this year also set a new high mark! If you want to share in Studebaker-Erskine profits for 1928, mail the attached coupon — NOW!

Fill every motor car need with one of these Studebaker-Erskine fine cars!

The New President Straight Eight
100-H.P. — 80 M.P.H. — 131-in. wheelbase
\$1985 / \$2250

The World's Champion Commander
25,000 miles in less than 23,000 minutes
\$1495 / \$1695

The New Dictator
24-hour record for stock cars under \$1400
\$1195 / \$1295

New American Edition of Erskine Six
24-hour record for stock cars under \$1000
\$795 / \$965

(All prices f. o. b. factory)

New Contract for towns and villages

An ideal contract for small communities. Little capital is required. No shop need be operated. No used cars need be handled. By maintaining an Erskine demonstrator you are entitled to sell all Studebaker-Erskine models, as well as profitable line of commercial cars. Mail attached coupon — or wire direct, Dept. 51, The Studebaker Corporation of America, South Bend, Indiana.

THE STUDEBAKER CORPORATION OF AMERICA
Dept. 51, SOUTH BEND, INDIANA
Please send me full information on the Studebaker-Erskine franchise.

Name

Street Address

City and State

My present business (if selling cars now, state make)



Making the Nash Franchise Even More Profitable

"It is my belief that no manufacturer can long succeed who fails to regard his dealers as his partners.

"The automobile dealer is justly entitled to an equitable return upon his capital investment and his time.

"I propose to make it my personal responsibility to see that the Nash dealer is given every practical help in helping himself.

"When a man assumes the Nash franchise I look upon him as virtually my partner."

C. W. Nash

In keeping with its aggressive program directed toward placing the Nash dealer in a more and more favorable competitive position The Nash Motors Company has devised and inaugurated a new extra-profit plan. If you are not fully informed

concerning the latest money-making features of the Nash contract which result from the plan, address the Sales Department, The Nash Motors Company, Kenosha, Wisconsin. Your inquiry will be held strictly confidential.

NASH

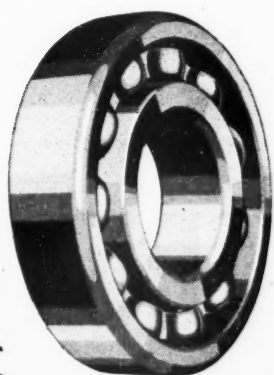
(7983)

Bearings Now Selected On Basis of "Car-mile" Costs

NOW that it is generally known that it often costs as much or more to "get at" a bearing in out of the way positions to readjust than it does to replace it, adjustability has ceased to be used as a selling argument.

New Departures are generally favored in those positions where care-free service is most desired—because New Departures, by design, greater precision and wear-proof construction endure with minimum attention and no adjustment for the life of the mechanism in which they are installed.

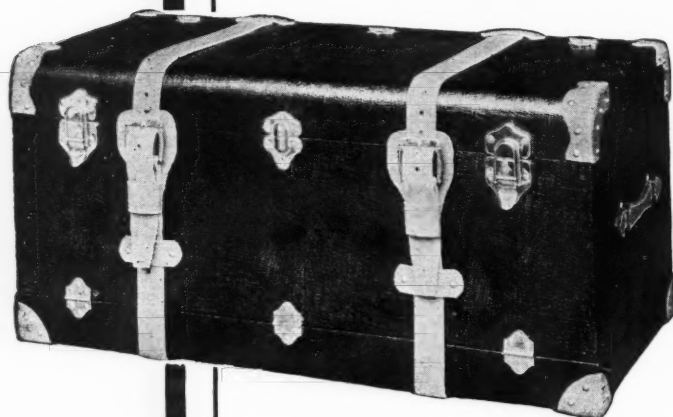
THE NEW DEPARTURE MANUFACTURING COMPANY
BRISTOL, CONNECTICUT
Detroit San Francisco Chicago



New Departure
Quality
Ball Bearings

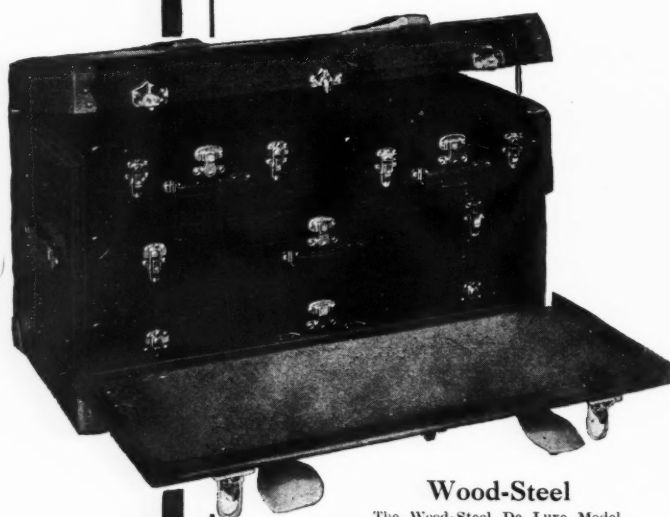
Pickards Are Preferred

for
Beauty
Style
Service



Fabrikoid

Fabrikoid De Luxe Model is built of 3-ply wood and covered with Du Pont Fabrikoid. Trimmed in black or tan leather, or solid brass, nickeled. Guaranteed dust-proof and water-proof, without storm cover.



Wood-Steel

The Wood-Steel De Luxe Model, illustrated above, is built of 3-ply wood and covered with 22-gauge body steel. Trimmed in black or tan leather, or solid brass, nickeled. In the wood-steel model, the same designs are possible as in the fabric-covered line. Guaranteed rumble-proof, dust-proof and water-proof without storm cover.

When only the market's best materials are given over to the best craftsmen for workmanship there can be but one result—THE BEST PRODUCT.

Pickard's Trunks are built on standard principles of construction with Du Pont Fabrikoid or Body Steel. Pickards are built to wear long, retain their shape and beauty. Climatic conditions do not affect the Pickard Trunks.

Pickard offers a complete line of trunks—in black or color; all models, running board, fender, standard, de luxe, wood-steel and special models. Made with or without carrier to fit any car. A complete line means complete sales satisfaction to your customers.

Car owners like the final touch of refinement, and demand Pickard. Write now for the worthwhile and profitable offer for the man who handles Pickard Trunks of Quality.

PICKARD TRUNKS

On A Trunk Means Quality

PICKARD TRUNK CO. Inc., LIVONIA, N.Y. Formerly Dansville Trunk Corp.

MOTOR AGE

VOLUME LIII

Philadelphia, April 5, 1928

NUMBER 14

Output Expected to Set a Record

March Totals Imposing With
April Forecast as Best
Month

ORDERS LARGE

DETROIT, April 2—With prospects of an early spring never better than they are this year, automobile factories have already swung into heavy production and it is believed that April output will set a new high mark.

Dodge Brothers produced 26,895 units in March, a gain of 29.8 per cent over February, bringing production for the first quarter to 60,387 compared with 46,566 in the first quarter of last year.

Buick output was close to 19,000 in March, compared with 18,600 in February.

Output of Cadillac-La Salle was 4500 in March compared with 3750 in February.

Studebaker built 16,500 units in March compared with 15,132 in March last year. Studebaker produced for the first quarter a total of 36,000 compared with 30,500 in the first quarter of last year.

Set New All-Time Record

Marmon built 2581 cars in March, setting a new all-time record for the company. Output for the first quarter totals 6722, a gain of 81 per cent over the corresponding period of last year.

The Ford Motor Co. made 25,720 cars in March, bringing output of the Model A up to 50,000 since the car was announced last December. The company goes on a 2000 a day schedule this week.

A new all-time record was set by the Graham-Paige Motors Corp. in March when 7616 units were shipped. The mark exceeds any month in the history of the old Paige-Detroit Co.

Chevrolet Motor Co. production continues to set new marks. Output for March was 103,657 and it is expected that practically the same rate will be maintained during April.

Hupp Motor Car Corp. set a new all-time record in March, shipping 8034, a gain of nearly 3000 over February.

Nearly every car maker reports many unfilled orders.

Girl Students Want Engineering Course

LANSING, April 3—A group of co-eds of the Michigan state college is seriously considering the place to which women may attain in the automotive industry. With this in mind 18 of the co-eds have petitioned the faculty to extend a course in automotive engineering to the girl students.

It is believed that their request will be complied with.

New Whippet is Lowest Priced 6

TOLEDO, April 3—A new Whippet Six, the lowest priced six-cylinder car in the world, will soon be announced by the Willys-Overland Co., according to a statement made today by John N. Willys, president of the company. While actual prices or mechanical details are not available as yet, it is stated the car will have such features as a seven-bearing crankshaft, full force feed lubrication, silent timing chain, unusually long connecting rods, Nelson type invar strut pistons and four-wheel brakes.

According to Mr. Willys, 100 of these cars have been in the field and have been tested for 300,000 miles. It was also stated that one of these cars recently broke the 24-hour speed record for cars under \$1,000 by establishing an average of 56.52 m.p.h. for the distance. On a 50-mile test on the Indianapolis track, the car averaged 63 miles.

Tew Succeeds Hough as Goodrich Co. President

NEW YORK, March 30—The resignation of Harry Hough as president of B. F. Goodrich Co. was accepted at a meeting of the board of directors held in this city last week. James D. Tew, long associated with the company, succeeds Mr. Hough.

Mr. Hough, who tendered his resignation because he wished to be relieved of much of the responsibility demanded by the position, remains a member of the directorate.

Hub "Old Timers" in Annual Meet

Boston Dealers of 25 Years
Past Recall Early Days
of Industry

MANY ATTEND

BOSTON, April 4—The second annual luncheon given by the Boston Automobile Dealers Association to the Old Timers brought out a number of real "old-timers." In addition to Governor Alvan T. Fuller, there were the following:

John H. MacAlman (Stearns-Knight), Charles E. Fay (Chrysler), F. A. Hinchcliffe (Auburn and Jordan), George M. Patten (Reo), C. P. Rockwell (Nash), Otto A. Lawton (Franklin), Harry K. Noyes (Buick), A. T. Partridge (Ford), Willard A. Maynard (Mack Truck), Chester I. Campbell, show manager; Harry Fosdick, W. L. Russell, C. F. Whitney, J. W. Bowman, A. P. Underhill, Kenneth E. Skinner, William C. Sills, Leslie B. Sanders, Charles Malley, George W. MacNear, George M. Crittenden, Josiah S. Hathaway, Frank E. Wing, F. M. Rollins, William J. Connell, James L. McKone, Day Baker, Louis Ulmer, Charles A. Marden, John C. Kerrison and James T. Sullivan.

Harry K. Noyes of Noyes-Buick Co., told how he came to Boston from Lowell to see Governor Fuller to try to get the agency for the Cadillac in his home town.

Noyes Sold Potatoes

"We like to have our agents look as good as the car," Noyes was told. "What did you sell before you went into automobiles?"

"Potatoes," Noyes answered.

"Why in h— didn't you stick to that?" was Mr. Fuller's comment.

"And I went home without the Cadillac agency," Noyes told the gathering amid a lot of laughter.

Governor Fuller told of an amusing experience in selling his first big Packard limousine. It was to a prominent society woman. She wanted everything possible in it. George W. MacNear, the well-known body builder, was in the salesroom back of another car listening to the talk, he having agreed upon a

(Turn to page 17, please)

Old Post Path Now Wide Road

Highway 255 Years Old Now
Paved Throughout Entire
Length

By E. E. Duffy

BOSTON, April 3—America's first lengthy highway, the Boston Post Road, is now 255 years old. The story of this ancient trail, first a riders' path, now a smooth, rigid roadway, is a history of highway building in itself.

The Boston Post Road has evolved into one of America's truly modern thoroughfares. This route was one of the earliest roadways four traffic lanes wide, and is considered the longest wide highway in the country.

In the early winter of 1673, the first horseback post left New York City for the other principal city of the New World, Boston. This was the earliest attempt to link together these two cities, towns then, by land. The rider left New York with messages from Governor Lovelace to Governor Winthrop of Connecticut and the governor of the Massachusetts Bay Colony. At the end of the second day the message bearer was still in the confines of the present New York City, for the trail was poorly marked.

The first journey required two weeks. Later, when provisions were made for changing horses along the route, the time was reduced to one week with 30 to 50 miles as the average daily distance.

Frail bridges that trembled under the impact of horses' hoofs were erected to eliminate the countless fords necessitated by the meandering trail. In 1713 the New York Assembly established a right of way four rods wide between New York City and the Connecticut boundary. but it was not until 1772 that the first coach journey was made by Jonathan and Nicholas Brown. Riding on hard, backless seats, the travel-worn tourist welcomed the end

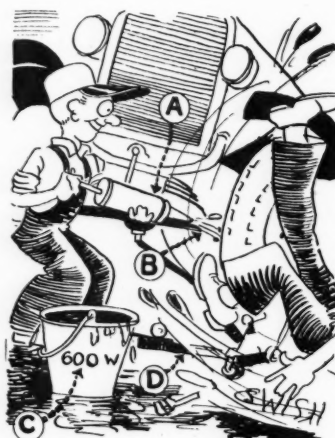
(Turn to page 19, please)

McClaren Vacationing

CHARLOTTE, N. C., March 31—H. L. McClaren, president of the Ajax Rubber Co., of Racine, Wis., announced here that he was leaving for a trip to the British West Indies. He said he did not have time last year to take a vacation. He also is president of the McClaren Rubber Co. of Charlotte.

On his return, Mr. McClaren said he expected to make an important announcement regarding his companies' plans for development.

Sloppy-Shop Kinks



No. 4—Fixing Brakes

WE have very effectually overcome annoying brake squeak in the following manner: Jack up the rear axle and back off brake adjustment. Then apply a heavy coating of 600 W to the lining. Although this is a sure cure for squeaking brakes, we would not recommend that it be used in any town that makes use of stop lights or has cross streets.

F. T. Moore Twenty-Five Years With Goodrich Co.

BOSTON, April 2—A large gathering of Goodrich employees and dealers were on hand to extend congratulations to Fred T. Moore, district manager of the B. F. Goodrich Rubber Co., when he entered his office last Wednesday morning. The day marked his twenty-fifth anniversary with the Goodrich company.

Hazlett Talks to Dealers

COLUMBUS, OHIO, March 31—More than 200 of central Ohio Goodyear dealers attended a dinner and sales conference at the Neil House last week. The assemblage was addressed by W. A. Hazlett, Eastern division sales manager of the Goodyear Co. He said that 1928 would be an outstanding year in the tire business for those equipped to care for the increasing demand for adequate tire service. A. W. Wilson, branch manager at Columbus, presided.

Corcoran at Seattle

SEATTLE, April 2—L. E. Corcoran, general sales manager of the Stearns-Knight Sales Corp., visited here recently with August Johnson, president of the Transport Motor Co.

School Ford Men in Servicing Cars

Ten Thousand Will Receive
Instructions on Cars
and Trucks

DETROIT, April 4—Uniformity of service on the new Ford Model "A" cars and Model "AA" trucks is being maintained by the Ford Motor Co. through a plan which involves the training, in the Ford plants, of 10,000 garage mechanics. For weeks the Ford branch plants, and the Detroit factories have assumed the character of a gigantic training school, to which every Ford dealer in the United States is sending one or more representatives.

This school for service men began with the training of superintendents and foremen of the 36 branch plants of the company in the United States. Months before the Model "A" Ford car was introduced, these men from the branch plants were being schooled in the Ford factories near Detroit in the manufacture and assembly of the new car. They returned to the 36 Ford branches and immediately began the training of men for dealers in their respective territories. The men came in relays.

Groups were purposely kept small, in order that the most intensive training could be given. Each man was put through the same course given the branch men at Detroit, and upon its completion was given a rigorous examination. This examination included many points about the car which might not be considered essential, from the service man's viewpoint. However, the Ford company is requiring complete knowledge of the car on the part of every dealer's service men. Failure to make a passing grade meant that the man had to take the entire course again. If he failed a second time, he was sent back to the dealer with the suggestion that he was not considered qualified to give Ford service; whereupon, the dealer was required to send another man for the next training school session.

Peterson Studebaker P. A.

SOUTH BEND, IND., March 30—H. S. Vance, vice-president of the Studebaker corporation, recently announced the appointment of P. O. Peterson as purchasing agent, succeeding A. J. Chanter, who was recently made manager of branches.

Mr. Peterson has been a member of the Studebaker organization for the past eight and one-half years, having been assistant purchasing agent prior to his advancement to his new position.

Dodge Production Being Stepped Up

All District Offices Report Great Improvement in Conditions

DETROIT, April 2—Dodge Bros. production is running along at approximately 1100 units daily, said John R. Lee, general sales manager, adding that the schedule will be stepped up to about 1500 units a day some time this week. Of the April schedule approximately 1300 passenger cars and 200 commercial vehicles will be built daily by the company, according to present plans.

Used car stocks are lower than during the corresponding period a year ago, and new car stocks in dealers' hands are also in a favorable position, said Mr. Lee.

"I believe," he added, "that without question business during the second quarter should be far better than the first."

"Our 25 district offices all report greatly improved conditions in the field. They have particularly noted a rapidly increasing improvement during the past 60 days and there is every indication that it will continue in a favorable condition through the second quarter. The rather spotted business condition which prevailed during the early part of the first quarter has cleared up, our reports indicate, and business seems well distributed throughout the entire country."

Falcon Reduces Prices

DETROIT, March 31—Falcon Motors Corp. announced a price reduction of \$100 on all its models today. The new prices are: Two-door sedan \$995, coupe \$1,045, four-door sedan \$1,095.

It was stated that production of a new Grey Ghost roadster will be under way in about two weeks.

Heads G.M. Export



J. D. Mooney

MR. MOONEY is president of the General Motors Export Co., in charge of overseas operations of General Motors Corp. in 104 countries. The export trade is supplied with General Motors cars from 21 assembly plants and warehouses located at strategic points overseas. This is Mr. Mooney's latest.

Chevrolet Atlanta Plant Approaches Completion

ATLANTA, GA., March 30—The two-million-dollar assembly plant of the Chevrolet Motor Co. here is nearly completed and will start actual production about April 15, it has been announced by W. S. Knudsen.

The production schedule calls for the assembly of 2000 Chevrolet at the Atlanta plant during the last two weeks in April, while during May it is expected that 6000 cars will be assembled.

Oakland Now Has Own Test Track

Also Maintains Usual Fleet at G. M. C. Proving Grounds

PONTIAC, April 2—The Oakland Motor Car Co. has built a large cinder track to be utilized as a private factory test track for Oakland-Pontiac cars. The track adjoins the Pontiac Six and new Oakland All-American Six assembly plants. Exits from the two assembly buildings open directly upon the test track. A squad of 20 test drivers has been engaged to drive both Oaklands and Pontiacs around the loop. After a thorough road test the cars will be returned to their respective inspection departments where they will be rechecked.

The track, which crosses the rails of the company's railroad yards and presents a rough contour insuring a vigorous test of performance and riding comfort, is a part of the program laid out by Gordon Lefebvre, vice-president in charge of operations, who announced recently that he intends to provide the company's dealers with cars that require a minimum amount of inspection and adjustment before delivery to purchasers.

The test track, it is pointed out, in no way interferes with the company's practice of maintaining a fleet of major test cars in constant operation at the General Motors Proving Ground.

New Spark Plug Display

NEWARK, March 31—A window display calculated to make the motorist stop, look and buy, is the new 12-unit spark plug display of Splitdorf Electrical Co., that is rapidly making its appearance in dealers' and jobbers' windows throughout the country.

The Splitdorf display, of most attractive design, has 12 pieces.

Used Cars, Trader Horn and Tiny Towns

THE used-car problem. That phrase is in popular usage wherever automotive men—convivial, Trader Horn would say—foregather. Within dealer establishments, barring a few conspicuous exceptions, the used car is the problem of problems. But is it a problem? In next week's issue of MOTOR AGE a well-known association manager says "No!" In his opinion it's a challenge, first and all-important, to the buying ability of the dealer. Get his interesting slant from "Problem? No! The Used Car is a Challenge."

"Succeeding in a Big Way in a Tiny Town," details the methods of a small-town dealer who built a business that had use for only one service man into one that now has to employ six.

Good roads unquestionably cut down sales resistance. That in itself is ample reason for the article in the issue entitled "Car Dealers Must be Road Salesmen."

To round out a week of good reading you will find, in addition, "Unsold Service Unsells Sales," several other feature articles and the departments that have won reader respect.

A. A. A. Endorses 3 Major Programs

Elimination of Private Toll Bridges and Excise Tax Sought

WASHINGTON, March 31—Three major programs of interest, alike to the motorist and the automobile manufacturer, were endorsed this week and will be pushed by the American Automobile Association, it was decided at the annual meeting of the National Motor Congress of the American Automobile Association, attended by 500 delegates representing 1046 motor clubs.

Of prime importance was the program for Federal highway aid, which the association declared was of most vital interest to the growing motor traffic of the country. The association voted to work for a continuance of the \$75,000,000 annual appropriation and to oppose private interests in the operation of toll bridges. A greater need for nation-wide safety among automobile drivers was stressed and the association formulated a program to be accomplished through education and an endeavor to eliminate the hazards of street and highways.

The third major program was a continuation of the efforts being made to abolish the three per cent excise tax, now imposed on automobiles valued at less than \$1,000. Speakers before the fourth annual congress included Senator Tasker L. Oddie of Nevada, who spoke on Federal aid and declared that "it is our duty now to start a new program for wider and stronger roads in the Eastern States where traffic is heaviest."

Other speakers included Thomas H. MacDonald, chief of the U. S. Bureau of Public Roads; Representative James C. McLaughlin of Michigan, who spoke on the elimination of the three per cent excise tax; Thomas P. Henry, president of the organization; Clarence Chamberlin, trans-Atlantic flier; Paul Hoffman, vice-president of Studebaker; C. A. Vane, manager of the National Automobile Dealers' Association; Clarence J. McLeod and Robert H. Clancy, representatives of Michigan, who have been active in the excise tax repeal.

Neil Succeeds Harris

ATLANTA, April 3—The Firestone Tire & Rubber Co. has announced the recent appointment of R. M. Neil as manager of the company's local branch. Mr. Neil succeeds W. C. Harris, who has been transferred to the Jacksonville, Fla., branch.

Heads Branch



C. Irving Dwinell

MR. DWINELL is introduced to readers of MOTOR AGE because he has recently been placed in charge of the Boston office of U. S. Electrical Tool Co. Congratulations!

White Names J. Rathbun Eastern Vice-President

CLEVELAND, March 31—Announcement was made today by Walter C. White, president of The White Co., manufacturer of motor trucks and buses, of the appointment of Jay Rathbun as vice-president of the Eastern region, with headquarters at 17 Battery Place, New York.

Mr. Rathbun has been a vice-president of The White Co. in charge of the export department since 1926.

John Howard Advertising Manager of GMC Truck

DETROIT, March 31—John M. Howard, well known in commercial car advertising circles, has been appointed advertising manager of the General Motors Truck Co. Previous to joining General Motors Truck Mr. Howard had been affiliated with the Federal Motor Truck Co. as advertising manager for the past two and one-half years. Previously he had gained wide experience in the advertising and sales promotion field, having devoted 14 years to the work up until the time of his recent appointment.

In commenting upon the appointment, O. L. Arnold, vice-president in directing sales said: "In obtaining Mr. Howard's services we are quite fortunate and are confident that he will play an active part in the future of G. M. Trucks."

Complete Repeal of Tax Probable

McLaughlin Predicts Present Congress Will Act Favorably

WASHINGTON, March 31—Announcement that the treasury department would have available tax returns by April 3 was made this week. Based on this return to Congress hangs the fate of the tax reduction program, which in its present state, as it passed the House, provides for the complete elimination of the three per cent tax on passenger cars. The elimination of the passenger car tax accounted for \$65,000,000 of the \$289,000,000 tax reduction program. Preliminary figures of the treasury department on March 27 indicated that the treasury department would not recommend more than a \$200,000,000 reduction.

Irrespective of the amount of reduction, a prediction has been made by Congressman James C. McLaughlin of Michigan, who has long been active for the elimination of the automotive tax, that it will be completely repealed at the present session of congress.

Spokesman for the President announced on Wednesday of this week that the President would approve any recommendations for tax reduction that might be made by Secretary Mellon. In the original tax program, Secretary Mellon's program urged the retention of the three per cent automotive tax, which, however, was overwhelmingly defeated both in the committee and on the floor. The tax measure is now with the Senate finance committee, pending the treasury department's report showing the amount of money the government will get, based on the March 15 returns. Those conversant with the long fight that has been waged for the repeal of the automobile tax are confident that it will be fully repealed at this session. The outstanding hazard, however, is that congress will vote too large a tax reduction and that the President will veto the entire bill. This probability, it is felt, however, is remote.

Meder With Allen Electric

KALAMAZOO, MICH., April 4—Allen Electric & Equipment Co., successor to the General Equipment Corp., announces the appointment of Charles Meder as Eastern representative.

Mr. Meder has been connected with the automotive industry since 1908. He will handle the whole of New York State and New England with headquarters at 1834 Broadway, New York City.

Gardner Creates New Body Style

Smart Design Features Full Length Doors and Double-Drop Frame

ST. LOUIS, April 2—Among the various custom-designed body styles, which the leading automobile manufacturers have presented to the public in the current season's showings, one of the smartest is the custom coupe, produced by the Gardner Motor Co., Inc., which features its new series 85 and 95, eights-in-line.

The explanation of its creation is described by L. C. Freeman, vice-president in charge of engineering, as follows:

"In the beginning we adopted for the custom coupe the lines of the sport roadster, which sweep gracefully back downward. Keeping this idea uppermost we strove for minimum height, and this, in effect, decided us on doing away with the side aprons and constructing the doors clear to the running board. The result is a pleasing proportion and a most happy means of egress and ingress. Moreover, by following out our idea of building the coupe body into the roadster type, we achieve for the driver the lounging convenience and forward road vision which is found in the sport roadster."

Canadian Durant Gains

TORONTO, ONT., March 30—The annual report for 1927 of Durant Motors of Canada, Ltd., submitted at a recent meeting, showed net operating profits of \$396,691 as compared with \$234,593 in the preceding year. After providing for income tax and deducting dividends of \$113,873, being at the rate of 4 per cent on outstanding capital stock, there remained a surplus of \$243,648. This was added to amount brought forward from the preceding year, making a total of \$377,229 carried forward as against \$133,581 at the close of the 1926 business year.

The Road is Like a Tiger's Mouth

THE Chinese system of educating "jay walkers" might help in this country, according to the public safety department of the Automobile Club of Southern California.

The club quotes the following admonition to the public in China:

"Now the swift motor car and the street car are just like tigers, and if you do not obey the policeman's signals you will not live to grow and acquire many sons, but will be killed, and your sons, too, so that your ancestral tablets will be untended.

"The road is like a tiger's mouth; from its center keep away."

Kellerman Heads Chicago Pierce-Arrow Sales Corp.

CHICAGO, March 30—Joseph N. Kellerman has been appointed sales manager of the Pierce-Arrow Sales Corp., which acts as the Chicago factory branch.

He comes to Chicago from St. Louis, where for seven years he directed the selling activities of the Hudson-Essex over a wide territory. His past experience also included sales activities with the Cadillac and Packard.

Bermudans May Know Their Onions

But They Don't Know Cars Because They Have None, Says Strong

FLINT, MICH., April 3—The people of Bermuda may know their onions—but certainly not their automobiles.

Such is the comment of E. T. Strong, president and general manager of the Buick Motor Co., following his recent visit in company with R. F. Thompson to the beautiful island off the Florida coast. Mr. Thompson is general manager of the Howard Automobile Co., Buick distributor on the Pacific Coast.

The explanation of Mr. Strong's comment is that automobiles are absolutely barred from Bermuda. Beautiful roads stretching in every direction—scenes of exquisite beauty abounding—yet not a single automobile.

"It was like being transplanted back in the slow-motion world we knew 30 years ago," he said. "For a short time such an existence as Bermudans enjoy would doubtless be very delightful, but I doubt if very many of us here in America would want to see those days brought back for good."

Steal Three Cars a Day

WINNIPEG, MANITOBA, April 2—An approximate addition of \$50,000 to the rates on theft insurance on automobiles will be imposed on car owners by insurance companies in Manitoba during 1928. This increase is said by many to be caused by the fact that the administration of the law does not see to it that proper sentences are served out to car filchers.

The higher insurance rate, representing 20 per cent increase over that of last year, went into effect yesterday. The above announcement was made by A. C. Emmett, secretary of the Manitoba Motor League.

An average of three cars a day have been stolen in Winnipeg since the first of the year, Mr. Emmett declared.



A Group of Salesmen

HERE we have the sales staff of the Cass Motor Sales, Studebaker-Erskine dealer at Detroit. Front row—left to right: G. R. Beattie, R. S. Ellis, Richard Cott, vice-president and sales manager; H. C. Cooley and W. H. Ross. Back row—left to right: B. Loring, F. Middleton, E. Osborne, Fred Fearer, E. Sullivan, L. LaFlame, A. Peters and A. McCarty

Spring Opens to Good Business

Chicago

NEW and used car sales in March showed a material increase over February, being helped to a great extent by the spring weather. New car stocks are below normal, dealers in many cases being behind orders. Used car stocks are below normal for the season, the unusual weather being largely responsible.

New Orleans

THE automobile situation in New Orleans is far from satisfactory. There is a general business depression in the city. Chevrolet has had a phenomenal run of sales. All others have slumped. Sales of both light and heavy trucks are slightly below last year. New Fords not going quite as well as expected.

Cincinnati

THREE days of real spring weather have brought prospects in such numbers as to convince dealers that the next 90 days will bring a demand in excess of last year, with many forecasting a record season. Sales have been slow in the metropolitan district during the past month, but distributors characterize the wholesale business as unusually good.

Seattle

RETAIL car sales in Seattle and the Northwest averaged about 10 per cent behind March, 1927. Dealers account for this situation by explaining that the public is more conservative in its buying and that more people are holding their cars an extra year by spending a little money on overhauling.

There is plenty of money in this section and farming regions particularly have had a good year.

New York

MARCH has shown a considerable improvement over the past two months of the year in the sale of new and used cars, although the spring drive is not yet considered to be fully under way.

Conditions are not uniform throughout the market but, generally speaking, low and medium priced cars have been sold almost as rapidly as delivery could be made during the past month. There is also at least one outstanding example of a higher priced car which has been hanging up sales records so far this year.

Detroit

NEW car sales have shown considerable increase in Michigan in March compared with February and dealers are of the opinion that with the coming of more favorable spring weather a still more favorable condition will prevail. Used car stocks are giving many dealers much concern. It is estimated that used car stocks on hand are approximately 10 per cent greater than a year ago at the same time. The last week in February and the first two weeks of March saw a sharp increase in used car sales but the last two weeks of the month revealed a marked slackening in demand.

Boston

MOTOR car dealers will finish the first quarter with a larger total of sales by far than they did for the same period of a year ago. Expectations for April are very high just now. Some idea of how sales are going may be judged by registrations due to its being an open winter. Last year to March 1, there were 342,158 cars registered. Up to March 1 this year, there were 378,578. That is 36,420 more.

St. Louis

INDICATIONS are that, with a continuance of the present mild weather, spring business this year will be good, sales for March showing a 15 per cent increase over the new car volume during March last year. New car stocks in warehouses are ample to supply the demand, but not heavy. The used car business has also been most satisfactory during March.

Dallas

THE automotive business continues to show improvement, especially in sale of new cars. This was due in large measure to automobile shows. Dealers in low priced cars are not heavily stocked with new machines. Medium priced cars selling well. Usual number of high-priced cars being sold. Increased sale of new cars have boosted used car stocks in most sections.

Los Angeles

WHILE showing a seasonal increase over February, March failed to come near the March total of last year by a considerable margin, reflecting generally slower business conditions in southern California. New car stocks in dealers' hands are slightly higher.

San Francisco

PASSENGER car sales for March show about 15 per cent increase over February of this year and 10 per cent over March of last year, according to dealers' estimates. The last half of the month was better, due to improved weather. Trucks are moving 25 per cent better than last month. Used cars are slower.

Mails Tenth Order

CAMDEN, N. J., April 2—In a letter received by Mac Fulton, Inc., local Studebaker-Erskine distributor, Edward J. Borden of Camden placed an order for his tenth Studebaker—a Commander.

Appreciation of the fine service he has obtained from previous cars and best wishes for the dealer's continued success were expressed by Mr. Borden.

Denver

SPRING weather has reached Colorado and has brought with it a considerable revival in car sales, both new and used, with particular emphasis on middle class cars. It is reported that the local Ford factory will be on production next month and that will go a long way toward catching up with the Ford orders, as well as giving employment to a number of now idle men.

Milwaukee

DISTRIBUTORS and dealers feel greatly encouraged in surveying prospects for passenger car business in April by the fact that Milwaukee factories, representing the most diversified list of industries of any large city in America, are employing more persons at this time than at the peak of 1927, which was reached in April. The fact that there is a greater surplus of common labor than for two or three spring seasons past is not disturbing, even in contemplating the opportunities for selling used cars among this kind of people.

The used car situation is improved.

Cleveland

EXCEPTIONALLY good used car business was reported at a monthly meeting of all local dealers here, lower prices having reduced sales resistance considerably. New car sales, however, were not in quite the same class, salesmen reporting difficulty in persuading owners to turn in old cars at present low appraisals.

Business in some lines affecting the automotive industry was reported steady for the month.

Atlanta

THOUGH erratic weather interfered with March sales, new car business is reported by most dealers larger than March, 1927, making first quarter volume well above that of last year, and indications that the first half of the year will establish a new Atlanta and Georgia record as regards number of new cars sold. Chevrolet sales are the largest they have ever been in this district.

Minneapolis

REAL spring has arrived in the Twin City automobile distributing territory and many distributors haven't enough cars to take care of the demand. The used car situation is improved and inventories have been reduced from the winter status.

Kansas City

CAR sales in March were somewhat spotty but on the whole showed a substantial gain over last March. Several lines set new all time records. Deliveries have been held up on several new models because of shortage at factory. Ford deliveries and Whippet sales have made some inroads on Chevrolet in the light car field. Stocks of new cars in hands of most dealers are low. Used cars have been selling well and stocks are lower than in years.

No Changes In Peerless Policy

Annual Meeting Indicates
Control Remains in
Cleveland

RICHMOND, VA., April 3—Retention of the present management and maintenance of the present policies of the company were assured by the results of the annual meeting of the Peerless Motor Car Corp., held here today. All but two of the directors were re-elected and one new member was added to the board.

The directorate is composed as follows:—Robert M. Calfee, chairman of the board; Leon R. German, vice-president and general manager; F. A. Trester, secretary-treasurer; Charles A. Tucker, general sales manager; George A. Coulton, vice-president, Union Trust Co., Cleveland; H. C. Robinson, vice-president, Guardian Trust Co., Cleveland; Corliss E. Sullivan, president Central National Bank, Cleveland; H. A. Tremaine, Cleveland; L. J. Wolf, Cleveland; C. H. Larson, New York City; Edwin H. Parkhurst, vice-president Columbia Axle Co., Cleveland.

Mr. Parkhurst is the new member. The two directors not re-elected were V. W. Sincere, Cleveland, and W. R. Angell, vice-president Continental Motors Corp., Detroit.

The directors will meet on April 19 to elect a new president to fill the vacancy caused by the resignation of Edward Ver Linden in January. Since that time the business of the company has been conducted by an executive committee composed of Directors Calfee, German, Trester and Tucker.

Always on the Job



Carl Anderson

A DILLER, a dollar, a ten o'clock scholar" could never be sung of Carl Anderson, foreman of the grinding department of the Rees Manufacturing Co., of Pittsburgh, Pa. During his 10 years with the company he has never been late nor absent. Who knows of a better record?

Gardner Reports 30 Per Cent Dealer Increase

ST. LOUIS, MO., March 31—An expansion within recent months of approximately 30 per cent of new dealers and distributors, was announced this week by Russell E. Gardner, Jr., president of the Gardner Motor Co., Inc.

The expansion was made necessary, according to Mr. Gardner, in response to popular demand for its exclusive eight-in-line cars.

Good Roads Show to Attract Many

Exhibit and Convention to be
Held at Des Moines
May 28-June 1

DES MOINES, April 3—Nation-wide interest is being attracted to Des Moines on account of the sixteenth annual convention of the United States Good Roads Association, which will be held in conjunction with the United States Good Roads Show, Des Moines, May 28 to June 1. More than 500 dailies and 1000 weeklies throughout the country are carrying stories about this convention, which promises to be one of the most interesting and greatest good roads gatherings that has ever assembled in this section of the Northwest.

The railroads have made a special convention rate for delegates all over the United States. Summer rate tickets from all parts of the United States go into effect May 15. Many delegates and prospective delegates write J. A. Rountree, director general of the United States Good Roads Association, who has charge of headquarters, that they expect to take advantage of the summer rate tickets to attend the convention.

Already many of the leading road developers, road machinery and road material manufacturers and dealers are inquiring for space at the United States Good Roads show, which will be an up-to-date exhibit of the latest models in road machinery. It will be worth riding hundreds of miles to see the improved types of road machinery, say authorities.

What's Coming In Motordom

SHOWS

Automotive Equipment Ass'n, Coliseum, ChicagoOct. 22-27
*ChicagoJan. 26-Feb. 2
Goldsboro, N. C.April 9-13
National Standard Parts Association, Cleveland Auditorium...Oct. 29-Nov. 3
*New YorkJan. 5-12
*Will have special shop equipment exhibit.

CONVENTIONS

Automotive Engine Rebuilders Association, Coronado Hotel, St. Louis, June 11-14
Automotive Equipment Association, Grand Hotel, Mackinac Island, June 10-16
Automotive Equipment Ass'n, Coliseum, ChicagoOct. 22-27
National Standard Parts Association, Hollenden Hotel, Cleveland, Oct. 29-Nov. 3

New Jersey Automotive Trade Ass'n, ElizabethMay 8
Society of Automotive Engineers, Chateau Frontenac, Quebec...June 26-29
Texas Automotive Dealers Association, Gunter Hotel, San Antonio...April 16-17

RACES

Atlantic City, N. J.May 5
DetroitJune 3
Indianapolis, Hispano-Suiza and Stutz, April 16
IndianapolisMay 30

June 10—A. E. A. Summer Meeting Number, Motor World Wholesale

June 23—Engineering Issue—Automotive Industries

dibble Gabble

By Lewis C. Dibble

LEAVE it to John N. Willys to do things. His latest act is to name Colin Campbell vice-president in charge of sales of Willys-Overland. Mr. Willys has also elevated George M. Graham to a vice-presidency. Teaming up Colin Campbell with L. G. Peed, who remains as general sales manager, should produce some truly remarkable results.

PUTTING Federal truck advertising on the map is the latest job of C. D. McKim. Don won his spurs as a right smart merchandiser when sales manager of the Continental Motors Corporation. He has just joined the Federal Motor Truck Co. as advertising manager.

BUSINESS is going to hum right along in a very satisfactory fashion during the second quarter, was the confident belief expressed to us the other day by John R. Lee, general sales manager of Dodge Brothers, Inc. His company, in particular, is looking for a very remarkable increase, he said.

ABUSY chap is J. Howard Rees. When Mr. Rees retired as export manager of Hudson several months ago, he set the ball a rolling to organize a new company. Now he has completed the organization of Howard Motors Corp. and will manufacture the Howard, an automobile designed exclusively for the export trade.

IT'S 19 years ago that A. F. Dowell first became associated with the automobile body industry. Since that time he has carved an enviable name for himself in this particular branch of the automobile business. Now we hear that he is to become superintendent of plant No. 1 of the Murray Corp. of America, where he will have charge of the manufacture of passenger car bodies.

CONGRATULATIONS are pouring in on S. R. Thomas, who has been appointed chief engineer of Jordan. The appointment comes in the way of a promotion to Mr. Thomas, who previously was experimental engineer of the company.

FRIENDS of Russell Begg will be interested to know that he recently resigned his position of chief engineer at Jordan to become chief engineer of the Budd Wheel Co. and associate chief engineer of the Edward G. Budd Manufacturing Co., at Detroit. Mr. Begg has already taken up his headquarters at Detroit.

FRIENDS of W. G. Lewellen, assistant sales promotion manager of Chevrolet, are glad to learn that he is well on the road to recovery from an appendicitis operation which he underwent at Columbia, S. C.

MR. and MRS. HENRY FORD plan to spend the next two months abroad. Without a doubt their presence in the old countries will attract much attention and we look forward to the movie news reels showing them being afforded all kinds of receptions.

EVERY time that we hear Hudson-Essex has busted another production record we cannot help but feel that to R. T. Romine belongs the title of "Super salesman of Super Sixes." Here's the latest Hudson dope. March output will exceed 35,000 units, bringing production for the first quarter to more than 90,000.

EVERYBODY'S on their toes for a peek at the new Dodge Standard Six. The car made its official bow last Thursday night when President E. G. Wilmer stood before a microphone in his home in Detroit, and with the aid of 26 radio stations told the world the story of this new Dodge Brothers creation. For your information we've seen the car. It's smart! It's got pick-up! It's got s-p-e-e-d! It's got IT!

Stock Hispano is Shipped for Race

French Stock Car Arrives for Race With Stutz
April 16

INDIANAPOLIS, April 5—A cablegram from Charles T. Weymann, of Paris, France, sponsor of the Hispano-Suiza car in the approaching 24-hour international match race with a Stutz Black Hawk for a wager of \$25,000, advised F. E. Moskovics, president of the Stutz Motor Car Co. and sponsor of the Stutz, that Mr. Weymann's Boulogne type Hispano-Suiza speedster was shipped from France on Wednesday, March 28 on the SS. Ile de France. Leaving on the same vessel was Robert Bloch, famous French racing driver who will alternate with Mr. Weymann at the wheel of the Hispano in the 24-hour duel on the Indianapolis Motor Speedway on April 16. Mr. Weymann followed a few days later on the Levianthan.

The French car, which is generally credited with being the fastest stock car manufactured in Europe, is expected to arrive in Indianapolis about April 8, giving one week in which to tune the car for the race and permit the drivers to become acquainted with the peculiarities and difficulties of the Indianapolis track.

Only as familiarity with the Indianapolis Speedway is concerned will the Stutz drivers have any advantage over Robert Bloch and C. T. Weymann. Bloch has gained fame particularly in the famous 24-hour races at LeMans, France. In winning at LeMans in 1926, he established an all-time record for that strenuous course.

Due to an insistent demand from all sections of the country, it has been decided to admit the public to the race. However, neither of the individual sponsors of the race nor the Stutz Motor Car Company will participate in the receipts. The ticket sale will be conducted by the Indianapolis Motor Speedway management and by the Junior League of Indianapolis, and the latter organization will devote to charity all of the receipts from tickets which it sells.

Ericson Heads Biflex

CHICAGO, March 31—M. B. Ericson was elected president of the Biflex Products Co. of Waukegan, Ill., at the annual meeting of the board of directors, it was announced today. Mr. Ericson also retains the office of treasurer.

Peerless Shows New Brougham

Lowest Priced Closed Job is
Mounted on Six-Sixty
Chassis

CLEVELAND, April 4—A smart, dashing body design of the brougham type has just been announced by the Peerless Motor Car Corp. to go on the Six-60 chassis. In spite of the fact that this Six-60 Brougham is strictly up to Peerless standards in every respect, it is offered at \$1,195, the lowest price ever made on a Peerless closed car.

Also, in line with the Peerless policy of keeping its body designs well in advance of the trend, Peerless has announced that henceforth the famous Six-80 Sedan will be equipped with saddle lamps instead of the customary small lamps in the cowl, and that an attractive cadet visor replaces the extension of the top which has characterized Peerless closed cars for the past year.

Graham-Paige Model 835 Prices Are Announced

DETROIT, April 3—Prices of the Graham-Paige model 835, eight-cylinder, 135-inch wheelbase, scheduled for production this month are announced as follows: Sedan (five-passenger), \$2,285; Sedan (seven-passenger), \$2,410; Town Sedan (five-passenger), \$2,385; Cabriolet (rumble seat), \$2,485; Coupe (four-passenger), \$2,485. These prices include front and rear bumpers and six demountable wood or disk wheels; six wire wheels are \$75 extra. The model 835 is the last of the new line of Graham-Paige cars, announced at the New York show, to go into production, following closely upon the 615 model.

Opens New Showroom

PHILADELPHIA, April 2—Teefy-Seltz Co., Inc., Auburn distributor in Philadelphia, announces the opening on April 9 of a new \$70,000 showroom at 1419-1421 Spring Garden St. The new showroom is designed along the lines of a Spanish Garden and is the main feature of the new four-story building which this company has leased.

The number of Auburn dealers in this territory has been increased nearly 60 per cent in the last 12 months, Mr. Teefy said, the total now having reached fifty-seven.

Knight "6" Prices Lower

DETROIT, March 31—Marked price reductions in the Willys-Knight Stand-

ard 6 models were announced today by John N. Willys, president of the Willys-Overland Co. The new prices bring these cars \$150 lower than any previous Willys-Knight Six.

The new low prices follow: Five-passenger coach \$995, a reduction of \$150; five-passenger sedan \$1,095, reduction of \$150, and the coupe formerly selling at \$1,195 is now listed at \$1,045. Victoria and roadster models have been reduced to \$995.

Studebaker Opens New Canadian Showrooms

MONTREAL, CAN., March 29—The Studebaker Corp. of Canada, Ltd., recently opened new showrooms in Montreal at 973 St. Catherine St., West. These are decorated with unusual effects. A. B. Bastoes, Studebaker's architect from South Bend, has given a Spanish appearance and color to the walls and office of the new car display showroom on the ground floor and with approximately 5000 square feet of space, ample facilities for complete display are given, helped out by the unusual character of the decorations.

Star Changes Name

ELIZABETH, N. J., March 30—Effective immediately, the Star car will be known as the Durant Four (Star series), according to a statement made today by H. C. Tiffany, general manager of advertising and sales promotion.

Once in a Life-Time

By Walter L. Becker

I WANT to buy that 1916 model you have for sale. I've talked it over with the wife and she said to deliver it. I'm so sorry, but I haven't any old car to trade in on it. The financing charges seems to be very reasonable to me. Of course I'd rather pay cash for it, if that will be satisfactory. Have the other two tires boots also? They look more substantial with boots I think. Those few leaks in the radiator don't hurt its appearance any. I suppose a new car has much more play in the steering than this one.

So that thumping in the motor shows how powerful it is. Is that hole in the floor mat to rest one's heel in? A good coat of polish couldn't improve it so very much more. Did all these older models come equipped with different headlights? I notice the lens are not alike. I can tighten up those fenders myself, some afternoon. I'm glad the top covers the whole body instead of just one-man. Those bumpers certainly are curved artistically, aren't they?

You wouldn't be surprised to find the upholstering good as new, after the seat covers are taken off? That's fine. Just as long as the emergency brake holds, the other don't matter. That's good. Eight miles is a long distance for only one gallon of gas. And only a gallon of oil for 200 miles, seems impossible. So this is my bill of sale and other necessary papers.

So-glad-to-have-metcha.

Hub "Old Timers" in Annual Meet

(Continued from page 9)

price for the body. As Governor Fuller agreed to include this and that he would look over his shoulder at MacNear. The latter would make motions with his mouth without uttering a sound, saying, "More money, more money." Finally the contract was signed and from that time on Governor Fuller nicknamed Mr. MacNear "More Money Mac."

President John H. MacAlman, of the dealers association, told of how some years ago he got a letter from his factory regarding the used car situation, attached to which was a list of prices. The letter stated that from that time on these were to be the prices "acceptable to the factory" on used cars. On receipt of the letter MacAlman sent the following reply:

"Letter received. Prices quoted on used cars satisfactory to me. Am shipping you two carloads today."

"That was the last I heard of that new used car policy," MacAlman said.

Chester I. Campbell recalled that Governor Fuller, Mr. MacAlman and some others present exhibited at the first show in Boston 26 years ago.

Webster Resigns

CHICAGO, April 3—The board of directors of the Automotive Equipment Association today accepted the resignation of William M. Webster, commissioner.

Australian 24 Hr. Records Smashed

Studebaker Commander With
"Wizard" Smith at Wheel,
Cleans Slate

SOUTH BEND, April 5—A stock model Studebaker Commander roadster, in the heart of the Coolgardie Gold Fields in western Australia, smashed every existing Australian record for speed and endurance for 24 hours recently, according to cabled advice received here by the Studebaker Corp. of America. The "track" on which the Commander proved its mettle was the dry bed of Lake Perkolilli, located near the mining town of Kalgoorlie.

Driven by Norman "Wizard" Smith, veteran Australian driver, the Commander not only broke all Australian records for speed and endurance for 24 hours, but lowered all records for 100 to 1700 miles. The run was made under observation of the West Australian Royal Automobile Club.

During the 24-hour trial, the Commander traveled at an average speed of 70.8 m.p.h., including all stops for fuel and oil. The last 50 miles was covered at a speed of 78 m.p.h.

Ford Opens Another

OKLAHOMA CITY, April 2—The Oklahoma City assembling plant of the Ford Motor Co. will open next week,

J. W. Pipkin, general manager, announced. About 125 machinists and mechanics will go to work immediately preparing the plant for the new cars.

The plant has been closed since June, 1926. When the plant opens about 800 men will be employed at a daily wage of over \$5,000. The peak of employment is estimated at 1400 men, who will probably be working a few weeks after the plant has started, Pipkin said.

New Association Will Adopt Flat Rate Plan

DETROIT, April 2—As a result of the recent meeting sponsored by Detroit jobbers a new local repairmen's association is being organized. The meeting was addressed by Tom Dugan, Merchandising Service Director of the National Standard Parts Association, whose subject was "The Independent Repair Shop Today and Tomorrow." The association which is being formed as a result of this meeting plans to help its members apply standardized flat rates in their work, together with other sound merchandising practices that are a part of the N.S.P.A. merchandising policy.

Peck Succeeds Campbell

PITTSBURGH, PA., April 2—M. R. Peck, assistant to the president of the United States Chain & Forging Co., has been placed in charge of sales following the resignation of Frank Campbell, sales manager.

Willys '27 Profit Gains Materially

Sells More Than 180,000
Cars Totaling 150
Millions

TOLEDO, April 2—On a total volume of business of \$153,119,519 in 1927 the Willys-Overland Co. earned a net profit after all charges, but before preferred dividends, amounting to \$6,424,002, or equivalent to \$2.04 a share on outstanding common stock after the preferred dividends, according to the statement made to stockholders by President John N. Willys. Earnings in 1926 were \$1,819,690.

Gross profit was \$25,543,187 and other income added \$824,876. Expenses for selling, general, administrative accounts, bad debts, dismantling, rearranging, miscellaneous losses and interest amounted to \$19,036,827 and provision for Federal taxes totaled \$989,716. The company paid \$1,185,324 in dividends to preferred stockholders and \$5,238,679 was added to the surplus, bringing it to \$30,243,998 at the close of the year.

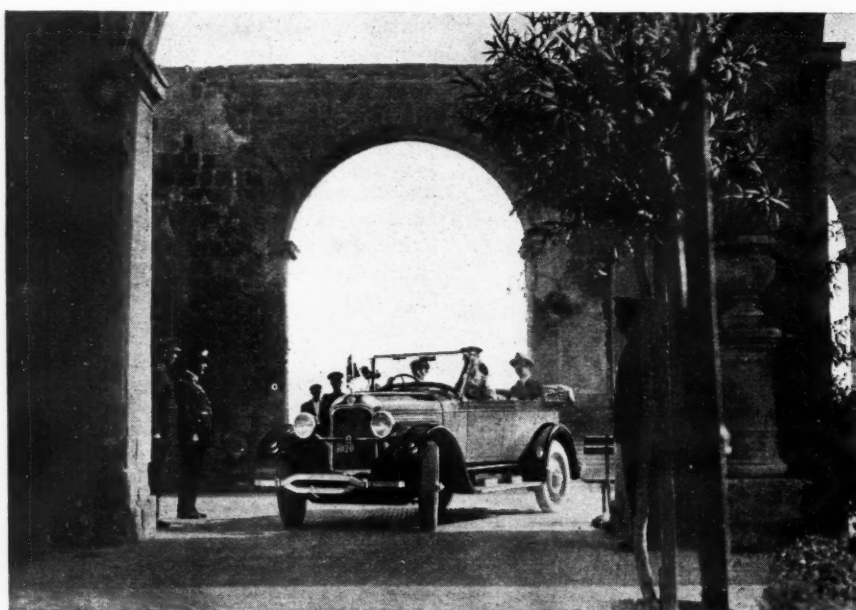
The balance sheet showed \$12,409,699 cash at the close of the year. Total current assets were \$35,718,617, as against current liabilities of \$7,287,019. Plants are carried at \$49,874,261 less \$19,254,968 depreciation. Total assets are \$72,988,817. Inventories were carried at \$20,514,944. Mr. Willys pointed out that bonds and preferred stock to the amount of \$1,750,000 had been retired and that \$1,300,000 had been expended to build new body manufacturing facilities.

"Sales for the year were 184,127 automobiles," reported Mr. Willys. "This total, because of industry conditions particularly affecting producers of low priced automobiles, was somewhat below expectations, although it compared favorably with competitor totals.

\$42,000,000 for Improvements

"During the last five years \$42,000,000 has been applied for the purpose of rehabilitating equipment, developing products and providing additional capacity at the Toledo, Pontiac, Elmira and Elyria plants. This has been done to improve quality and to so lower production costs as to make it possible to compete on a price basis with any manufacturer.

"Asset account has only been increased by \$3,233,000 since 1923 due to liberal depreciation and immediate charge-offs. These expenditures have resulted in doubling capacity."



Bows to the Dictator

AN American car was used by King Alphonso of Spain when he made a recent trip to the Island of Malta. During his two-day visit the King and his party made use of three Studebaker Dictator tourers. The royal family of Spain has owned Studebakers for several years

Colin Campbell to Head Willys Sales

With George Graham is Made Vice-President; Sales Break Records

DETROIT, April 2—Appointment of Colin Campbell as vice-president in charge of sales of Willys-Overland, Inc., was announced today by President John N. Willys. George M. Graham is also made a vice-president to be associated in the management of the business with Mr. Willys and L. A. Miller, first vice-president. L. G. Peed, for many years general sales manager, continues in that capacity.

The appointments are designed to greatly strengthen the Willys-Overland organization to keep pace with its present expanding developments.

After an extended service with Pierce-Arrow and Chandler, Mr. Graham returned to Willys-Overland last September as assistant to the president. He is a former director of the N.A.C.C. and has been prominent in many activities for the benefit of the industry.

In Mr. Campbell the company acquires the services of one of the outstanding sales executives of the automotive industry. As vice-president of Chevrolet he did much of the foundation work that carried Chevrolet to its present position. Subsequently he was vice-president and general manager of the Star car properties of the Durant Motors, Inc.

The announcement states his association with Willys-Overland will give new impetus to results which are already notable, since in the first quarter total sales of Willys-Knight and Whippet cars broke all records; 42 per cent more cars were shipped than in the similar three months of last year. The March volume exceeded by 4000 cars the highest figure for any month in the company's 20 years of history.

Old Post Road Improved

(Continued from page 10)

of the daily 40-mile jaunt lasting from sunup to sundown.

The need for paving was evidenced even in those days but the early attempts were not so successful. The "turnpiking" process consisted in placing a layer of rock covered with sand over the roadway. This gave an excellent roadway for a time but soon rain washed away the sand and travel over the exposed rocks was more difficult than ever. Later crushed stone and planking smoothed the way of the coach and four.

Motor traffic, increasing at the rate of ten per cent a year, made it mandatory that the road be widened. Even five years ago from 10,000 to 16,000 vehicles were using the road daily. For a time consideration was given the practicability of constructing a parallel route, but it was decided that it would be more economical to pave the Boston Post Road to a double width. The roadway, now concrete for the most part, is paved to a width of 36 or 40 ft.

N. J. Adopts Heavy Fine for Speed Law Violators

TRENTON, N. J., March 31—The New Jersey Assembly has passed a bill authorizing a maximum speed of 35 miles an hour with a penalty of \$50 fine or 10 days imprisonment, or both, for every violation. The former maximum was 30 miles an hour.

A. A. Zelke Heads New Stutz Chicago Branch

CHICAGO, March 30—Opening of a new branch at 5051 Broadway is announced by the Stutz Chicago Factory Branch, Inc. The new showroom is located in the heart of the uptown shopping district and has in connection a completely equipped parts department and service station. Andrew A. Zelke, formerly with Cadillac, is manager of the new store.

Fire Co. Sponsors Show

CAMBRIDGE, MD., April 3—The eighth annual automobile show held at the First Regiment Armory was declared to be the greatest ever arranged here. Thirty passenger cars of all models were displayed. The event, managed by Russell C. Spear, was under the auspices of the Rescue Fire Co. of this city.

Graham-Paige to Insure Salesmen

Company Places Half Million Coverage for 500 Who Have Qualified

DETROIT, April 3—Half a million dollars' worth of insurance has been placed by the Graham-Paige Motors Corp. to cover 500 retail salesmen who have proved their value to the company through their sales records. As other salesmen demonstrate their worth, they also will be covered says a communication from the company.

Thousand-dollar policies have been mailed to the 500 salesmen who qualified by their records in a special sales contest recently ended. Hereafter, a \$1,000 insurance will be placed for every salesman who sells 10 cars in any half-year period beginning Jan. 1 and July 1. Moreover, any salesman who is already insured will receive an additional \$1,000 coverage upon selling his quota of cars. The policy may thus be added to until \$5,000 total coverage is won.

The company pays all the insurance premiums and the salesman receives all the benefits of the insurance as long as he remains in the employ of a Graham-Paige dealer. The policies, which are issued without requiring a physical examination of the salesmen, cover death and disability.

72,986 GM Stockholders

NEW YORK, April 2—Holders of General Motors common and preferred stock for the first quarter of 1928 were 72,986 compared with 66,209 for the fourth quarter of 1927.



A Solid Trainload

THE fourth solid trainload of Marmon straight-eight automobiles in three weeks left the Marmon factory last week for Montreal, Canada. This shipment was to the Canadian Auto Sales Co., Marmon's new distributor for the Montreal territory. Left, H. H. Brooks, Marmon's general sales director; right, G. M. Williams, Marmon president

Howard to Start Production Soon

Builder of Vehicles for Export Buys Plant of Former Acme Brass Works

DETROIT, April 3—Announcement has been made by J. Howard Rees, president of Howard Motors Corp., of the acquisition of the former Acme Brass Works factory in Detroit. This company was organized a short time ago to build passenger cars and trucks for export only. In addition to Mr. Rees the officials of the new company include L. P. Chittenden, of the Ryan Sales Engineering Co., vice-president; H. B. Trix, director, and R. E. Fremont, secretary and treasurer.

It is expected that production will begin next week with 100 cars scheduled for April. Four chassis models will be offered, including two sixes and two straight eights, ranging in price from \$615 to \$2,485. The lowest priced model is a 103 in. wheelbase six rated at 15 hp. In addition there is a 20 hp. six with 110 in. wheelbase, a 120-in. 24 hp. straight eight and a 134-in. 29 hp. straight eight. Touring cars, roadsters and sedans will be offered on each chassis.

Two six-cylinder truck models rated respectively at $\frac{3}{4}$ and $1\frac{1}{2}$ tons will be added to the line as soon as passenger car production is well under way. These also will be exclusively for export.

E. V. Hennecke, Inc., Made Distributor for Cleveco

NEW YORK, April 3—Earle V. Hennecke, Inc., will act as the exclusive sales department to the automotive trade in the distribution of products of the Cleveland Varnish Co. The products are sold under the trade name "Cleveco."

Beggs Joins Budd

DETROIT, March 31—S. Russel Begg has been appointed chief engineer of the Budd Wheel Co. and also associate chief engineer of the Edward G. Budd Mfg. Co. at Detroit, it was announced today by Hugh Adams, vice-president.

Mr. Begg is one of the best known engineers in the automotive industry and has resigned as chief engineer of the Jordan Motor Car Co. to join the Budd organization.

Commenting upon the appointment Mr. Adams said, "We have known Mr. Begg over a long period of time, and we are very glad to have him with us."

A Competent Comptroller



W. B. Wardle

MR. WARDLE is honored by MOTOR AGE because he has been elected comptroller of Cadillac. Both Cadillac and Mr. Wardle are to be congratulated.

Hertz-Drive-Ur-Self Host to Office Employees

DETROIT, April 2—Executive office employees of the Hertz-Drive-Ur-Self stations, subsidiary of the General Motors Corp. that moved to Pontiac last Monday as part of the Yellow Truck & Coach Manufacturing Co., were guests at an informal party Thursday night at Hotel Roosevelt at Pontiac. C. W. Lipsey, vice-president and general manager of the organization, presided as host. Dancing, cards, and entertainment figured the program.

Executives of the company and the wives of those present in addition to Mr. and Mrs. Lipsey, were: Mr. and Mrs. F. H. Fleming, Mr. and Mrs. John Miller, Mr. and Mrs. Joseph Steden, Don Jordan, H. E. Listan, A. J. Shaughnessey, T. J. Bunnion, William Livingston, and William Reck.

The general office forces of the Yellow Truck & Coach Manufacturing Co. from Detroit and Chicago will move Saturday and early next week.

Move Offices

NEW YORK, April 4—The Asbestos Brake Lining Association and the National Battery Manufacturers Association have moved their offices to 7 East Forty-fourth St.

Young Says Dealer is Key to Market

Must Accept Responsibility to Owners, Declares Hupp President

DETROIT, March 31—While the 1928 cars continue to disclose important advancements in automobile design and construction, the importance of the local dealer as a factor in owner-satisfaction is becoming more and more evident, says DuBois Young, Hupmobile president and general manager.

"Public acceptance of a particular make motor car is resting more and more on its acceptance of that car's local dealer," he declares. "The car owner is tired of dodging the innumerable army of trade factors, all of them trying to sell him something. Car operation and maintenance are being increasingly recognized as jobs for the man who sold the car. His obvious obligation to the owner is to provide necessary service at minimum cost."

"The public has definitely reached the conclusion that every car built must have service from time to time, and that service will, in the long run, more than pay its cost in owner satisfaction and continued dependable operation. The dealer establishment through which the car was bought is the logical place for that service, and the dealer who sold it must assume his entire share of responsibility to the owner."

"Natural results of the growing knowledge of this fact are the establishment of bigger, more adequate dealerships and more enduring satisfaction in motor car ownership."

Benter Named Head of Auto Trade Association

PONTIAC, April 4—Albert C. Benter has been elected president of the Pontiac Automotive Trade Association. Other officers chosen are: Emmet L. Page, vice-president; Wells G. Brown, secretary and treasurer; directors, Frank S. Milward, Marney Habel, E. D. Hodges, Charles Rankin, H. E. Legg and J. M. Werner.

St. Louis Reo a Winner

ST. LOUIS, MO., Mar. 30—Reo-St. Louis, Inc., Reo distributor here, was the only large city distributor of Reo cars appearing in the list of winners in a national sales contest conducted by the factory for 1927. Chicago, where a factory branch is maintained, was also among the leaders in the contest, which was based on the percentage of Reo sales as compared with other cars.

Ford a "Green" Driver

B. A. "JACK" FORD, general manager for the Tate Motor Co., Dodge distributor for St. Louis, tells the following story. Ford, who has been driving automobiles as long as Barney Oldfield, took out a new car one day shortly after the gearshift was changed to "standard." Stopping for a traffic signal Ford noticed a sport roadster alongside, the driver of which was apparently preparing for a quick getaway when the signal changed.

"I'll show this bird some getaway myself," said Mr. Ford to himself as the signal flickered. Accordingly he snapped the lever into what would have been low gear on the old style Dodge. The result was a collision with a machine behind, driven by a pleasant faced, elderly woman.

Greatly chagrined Ford climbed out of the Dodge and said: "Madam, I'm awfully sorry, but it seems there has been no damage done."

"Just forget about it," responded the lady, "I was a green driver myself once."

Ford finally made the contemplated getaway, but not snappily.

Wireless Operators Asked to Stand-by

NEW YORK, April 3—More than 50,000 members of the American Radio Relay League, composed of Amateur wireless operators throughout America, are on the qui vive for messages from a mobile wireless station with call letters A & M located somewhere along the jungle trails of Africa. The portable wireless station is mounted on a truck which is making its way as part of an expedition from Cape Town to Cairo. Details of the expedition were printed on page 19 of the March 22 issue of MOTOR AGE. The expedition is being sponsored by General Motors of South Africa.

F. E. Hanley, manager of the Relay League, with headquarters at Hartford, Conn., has sent out notices to the membership, asking them to be on the alert for messages from the expedition. Mr. Hanley has suggested that if any messages from the African motorists are picked up, they be forwarded to J. D. Mooney, president of the General Motors Export Co., General Motors Bldg., New York City.

The last messages from the party read as follows:

"Crossing Limpopo River today. Heavy rains making roads almost impassable."

"Rick" at Hartford

HARTFORD, CONN., April 3—Capt. E. V. Rickenbacker, the ace of aces in the world war and assistant general sales manager of the Cadillac Motor Car Company, delivered a straight-from-the-shoulder message to the Cadillac dealers selling under Brown, Thomson & Company, distribu-

tor. The ace was met on his arrival here by A. C. Rose, general manager of the automobile department of Brown, Thomson & Co.

Speaking of Hartford's traffic problem, he told his audience that immense garages will have to be built near the large stores and that when double the number of cars are on the road the situation will be simpler because there will be super roads to take care of them and that higher speed will come in cars as well as in planes.

Schwab Heads Stevens Walden-Worcester, Inc.

WORCESTER, MASS., March 26—Louis Schwab was elected president of Stevens Walden-Worcester, Inc., at the annual meeting, succeeding J. V. Critchley, who was named chairman of the board. On the formation of the present company, Mr. Critchley agreed to continue as president during 1927 to enable Mr. Schwab, who formerly headed Stevens & Co., to become familiar with the new combined business. John Macaulay was elected treasurer.

Dorntge Heads Garage Ass'n

BUFFALO, March 29—The re-election of Millard C. Dorntge, manager of the Statler garage, as president of the International Garage Association, was announced in advices received in Buffalo from Washington, scene of the organization's annual convention. The association was formed here a year ago by owners and operators of large garages in this country and Canada.

Mr. Dorntge, whose re-election was unanimous, emphasized in his address to the convention the need of more modern parking garages in the business sections of cities to relieve traffic congestion.

Unemployment is Slightly Reduced

Automobile Manufacturers Take on Many as Season Gets Under Way

ELIZABETH, N. J., April 2—Unemployment in the industrial centers has been somewhat lowered the last two months by the employment of thousands of additional workers in the automobile plants, according to T. S. Johnston, assistant to W. C. Durant.

At the Durant plant at Elizabeth, N. J., the working force has been doubled since January with more men being added daily. At the present time nearly 5000 men are employed at this plant alone, while recent reports from other car manufacturers place the total of employed in car building at over 238,700. This is an increase of more than 11,000 over the highest peak reached last year.

The great increase in employment is a result of the flood of orders greatly in excess of production which began following the national and local automobile shows and the bringing out of the 1928 models, necessitating unprecedented production in nearly every plant.

The effect of this prosperity by the automobile plants is far reaching, for in turn all plants of material suppliers contributing to the automotive industry are experiencing unusual demands. Figures on the total of employed are not available at the present time, but are estimated as being far over those of last year.

Has Own Fire Department

GLENDALE, CALIF., April 3—Fire prevention in automobile dealers' salesrooms and service stations has been carried another step by the Packer Motor Co., Inc., Studebaker-Erskine distributor. Inspector G. D. McCleery of that city has called it "equal to the best in the country."

"Some time ago," writes the Packer Motor Co., "we realized that it was necessary in case of fire that a garage of any size should have a well organized fire-fighting personnel. We appointed one member of our organization to investigate the matter. He supervised the plans and he in turn appointed captains and lieutenants in charge of our fire-fighting apparatus."

"Next we had an air whistle installed, which was actually made in our shop, and arranged for periodical drills. The whistle acts as a fire alarm, and within a few seconds every man in the building is at a designated point with fire extinguishers, etc."

Gas, Oil and Hot Dogs—Drive In

Folks up in Lynn, Mass., where they make footwear, want the emblem on the state license tag changed from a codfish to a boot or shoe. Bill Ralph suggests local option in the matter. Boston, cold bean; Atlantic City, bathing booty; Philadelphia MOTOR AGE cover; Cleveland, soldiers' monument; Detroit, dynamo; Chicago, machine gun; New York City, flags of all nations; San Francisco, earthquake; Los Angeles, cafeteria tray; Miami, unused race track; Louisville, used race track.

"A Car for Her, Too!" reads the current Chevrolet advertisement. With the extension of the multiple-car family idea, we can hear the provider of the family reading it—"A Car for Her? Two!"

Answer to Constant Reader—A dibble is a small gardeners' tool for setting small plants or for dropping

seed; sometimes only a pointed stick, sometimes a wheel containing a series of projecting points.

There is no doubt that even in bible times there was a used car problem—or possibly it was used chariots. Proof of this is found in the seventh chapter of Matthew where it says, "Beware of false prophets." And even today we have entirely too many false profits.

The garagemen of Westland, Minn., have organized to boost their business by joint advertising. But they better quit referring to them as "joints."

Fifteen million storage batteries were produced in 1927, according to D. H. Kelly of the USL Battery Corp. and president of the National Battery Manufacturers' Association. Now we suppose that

some statistically-minded individual will soon figure how long some absent-minded old chappie could step on the starter with the ignition switch turned off and not use up all the "juice" of these batteries.

With the purchase of an ancient hearse by Henry Ford we recognize the truth of the old saying, "There's no accounting for taste."

Making Duco at Stains (near Paris). Well, well, that's the proper place to make Duco, isn't it?

Some time ago the Cadillac factory received the following postcard:—"Dear Sir:—pleas Send me a book on parts & a book on price list I want to build a car and by the parts. So Send me the books, from top to fram. pleas Send."

John Cleary Says—

It is the custom to think of the motor vehicle as the cause of traffic congestion in big cities.

Nothing could be farther from the truth.

Take the traffic peak hour at a busy intersection — say 42nd and Broadway, or State and Madison, or 12th and Market, or Cadillac Square, or Euclid and East 9th.

Then mentally eliminate from the scene all the passenger automobiles and motor trucks.

Imagine all the people in those automobiles added to the crowds milling around on the sidewalks or traversing the crossings or hanging to straps in the trolley cars.

Imagine all the merchandise in the motor trucks transferred to horse-drawn wagons.

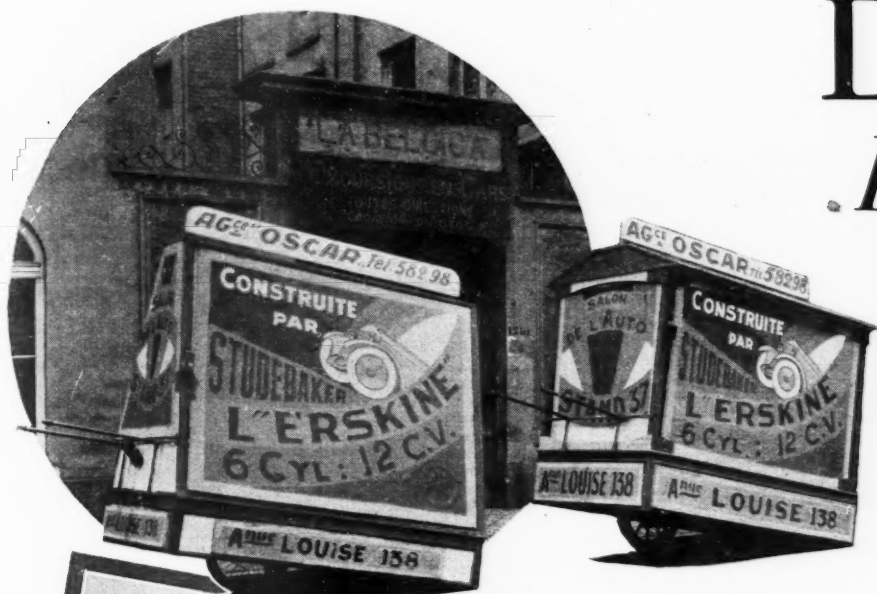
Then you would have congestion like unto the mob scene in a super-special movie spectacle.

Remember that we must thank the motor vehicle for actually preventing such chaotic congestion.

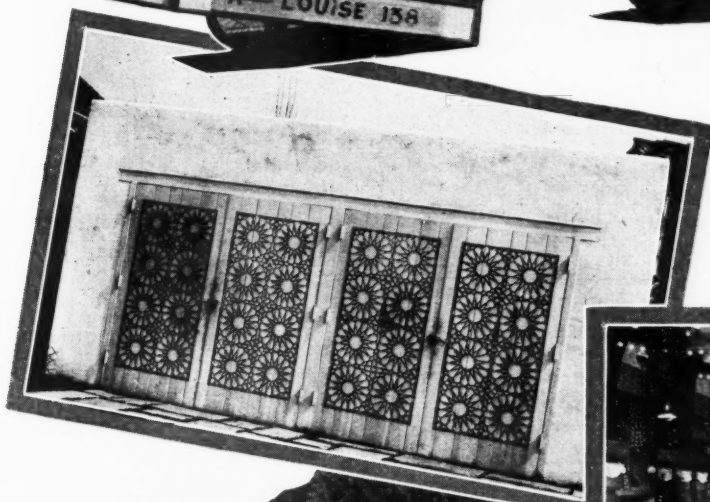
The greatest single factor in the relief of traffic congestion is the motor vehicle.

And that is no paradox.

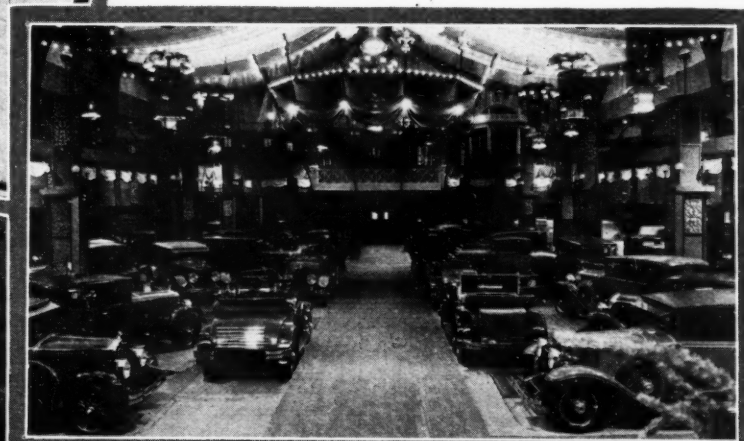
Doors— In, Out and Garage



Messieurs, at ze left, ees ze poosh-carts weech ze signs weech helped to poosh ze interes' in L'Erskine autos wen it were pooshed in toutes directions of ze beeznees section of Brussels. Pooshem opp Oscar!



The small two-car garage, shown at left, is called the "garage of a million tacks." It is located in Beverly Hills, Calif., and the intricate pattern is carried out entirely with nickel-headed art tacks. The boy who counted the tacks is now understudying Ben Turpin in the movies



The view above reveals a small part of the million-dollar spectacle known as the Boston Automobile Show, held recently in Mechanics Building. While it lasted it was the hub of interest in the Hub City

The California highway above, extending from Ventura to Benham Subway, a distance of 12.5 miles, was constructed while 6000 automobiles moved along the route daily. Detours were out of the question because of the sea, hills and bluffs and railroad tracks

A Used Car



Above, the certificate around which Cadillac built its used car selling contest

In oval above, Arthur J. Hughes, winner of first prize in the contest, of Upper Cadillac Corp., Newark, N. J.; extreme right, Hector Ross, second prize tie, Cadillac Motor Car Co., Detroit; right, Roderick Casavoy, second prize tie, of H. J. Murch, Fitchburg, Mass.



ARE you one of those who say there is nothing worthwhile that is *new* in the matter of increasing the sale of used cars? Ask H. M. Stephens, general sales manager of the Cadillac Motor Car Co. He has recently announced the results of a used-car plan that might refute your statement.

That the plan was worthwhile is demonstrated by the fact that it created the sales of 217 used cars, representing approximately \$200,000 *additional* used-car business during a period of 90 days, and by the further fact that the Cadillac factory immediately announced a second series of the same idea.

The plan was in the form of a National Cooperative Used-Car Certificate Contest. Every man and woman working for every Cadillac-LaSalle distributor and dealer in the country—including new-car salesmen—were eligible to enter the contest.

Cooperative sales certificates, with stubs attached, were mailed to all distributors and dealers for distribution to their employees. The nature of this certificate is apparent from the copy reproduced in these pages. Briefly, the employees were asked to use these certificates for the purpose of turning in the names of prospective buyers of used cars. The certificate proper, which was held by the employee, held the name of the dealer, the name of the employee and

a serial number. The stub bore, in addition to these data, the name and address of the prospect. When a prospect thus entered was sold, the employee was entitled to cash the certificate for \$10.

A contest was conducted among all the contesting employees. The employee who cashed the largest number of certificates received the national first prize of \$500. There was also a second prize of \$300 and a third prize of \$150. It was a requirement



Above is Lewis O. Brown, of Waynick Cadillac Co., Roanoke, Va., winner of third prize

Certificate Contest

Selling Plan as Worked Out By Cadillac Changes Employees' Attitude Toward Used Vehicles

By JOHN CLEARY

that the sale must be made within 60 days after the prospect's name was turned in. Certificates were cashed only for those who were in the distributor's or dealer's employ at the time of the purchase of the used car.

Arthur J. Hughes, new-car salesman for the Uppercu Cadillac Corp., Newark, N. J., won the first prize of \$500. The second prize of \$300 was divided equally between Roderick Casavoy, in the Service Department of H. J. Murch, Fitchburg, Mass., and Hector Ross, foreman of the Used Car Repair Department, Cadillac Motor Car Company, Detroit, Mich. Lewis O. Brown, of the Accounting Department of the Waynick Cadillac Company, Roanoke, Va., was awarded the third prize of \$150.

Four other entrants were awarded honorable mention and a Cadillac pen and pencil set. They were William A. Honeker, Uppercu Cadillac Corp., Newark, N. J.; J. M. Landers, Madison-Smith Cadillac Co., Little Rock, Ark.; Henry Mueller, Uppercu Cadillac Corp., Newark, N. J., and Harold Overhiser, Genesee Motor Car Co., Syracuse, N. Y.

In all, 956 certificates were issued by the distributing organization in the 90 days during which the contest ran. Of these 217 certificates—or 22.6 per cent—were cashed. Put in another way, this means that one person was actually sold for virtually every four names of the used-car prospects turned in by contestants.

W. W. Lewis, assistant general sales manager and director of advertising, is the daddy of the certificate and the contest.

"This little piece of paper," says Mr. Lewis, "is serving as a definite instrument of good-will within our organizations.

"It has been characteristic of new-car salesmen to avoid any reference to a thing so scurrilous as a used car. He would not even ask the prospect casually, during his visit, whether he might know of a used-car prospect among his acquaintances. Our used-car certificate is changing that picture.

"Then too, there are bookkeepers, telephone girls and janitors, as well as men in the shop and boys on the wash rack, who not only might buy used cars themselves, but who have friends who might buy used cars. The certificate is bringing about a selling attitude throughout the whole dealer organization.

"The certificate contest is only a part of our used-car merchandising activity. Our used-car advertising in national magazines and newspapers has brought very definite results in the way of helping to eradicate the greatest deterrent to used-car sales—the fear on the part of the average man that he will not be dealt with fairly in the purchase of a used car."

It will be noted that of the eight employees awarded prizes or honorable mention in the first contest, three hailed from the Uppercu organization in Newark, N. J. It also happened that these three Newark contestants were responsible for nearly half of the certificates cashed by the eight honor men. We asked the Clarence Twins—Fisher and Schuyler—who, as manager and assistant, guide the destinies of the Newark outfit, how they did it.

"We were just lucky," answered Clarence Fisher, manager. "The certificate and the contest built around it fitted in ideally with our efforts to promote cooperation among the various departments of our business."

"As for the winner of the first prize," added Clarence
(Turn to page 29, please)



Recipients of honorable mention, from left to right: Henry Mueller, Uppercu Cadillac Corp., Newark, N. J.; J. M. Landers, Madison-Smith Cadillac Co., Little Rock, Ark.; William A. Honeker, Uppercu Cadillac Corp., Newark, N. J., and Harold Overhiser, Genesee Motor Car Co., Syracuse, N. Y.

Toll Bridge Taboo is

*Program of Automotive Leaders Directed at Private Ownership
Seeks Elimination of Toll Bridges Wherever Possible. Dis-
tributors and Dealers Have a Stake in the Matter*

AT the beginning of 1928 there were 233 toll bridges in operation in the United States, 86 of which have been built within the last ten years; 191 are privately owned.

At present there are 29 new toll bridges under construction—20 of which are private enterprises—and 163 proposed for construction. Included in this number proposed for construction are all projected bridges regarding which some definite step has been taken, such as the filing of an application for franchise or the organization of a company to finance the construction, at the time of completion of a survey made recently by the Bureau of Public Roads.

The present session of Congress has seen the passage of a large number of new toll bridge bills, a number of which turn over to private interests the profit-making concessions to build and operate these bridges.

The interests of the general public as well as those of the automotive industry seem likely to be ill served by the continued establishment of toll bridges, particularly when they are given over to private interests for money-making purposes. In those cases where bridges actually are needed as economic units in the development of our highway systems, and yet cannot apparently be procured by the ordinary methods of highway financing, it would seem highly desirable that such toll operation as there may exist be in the hands of state or municipal authorities.

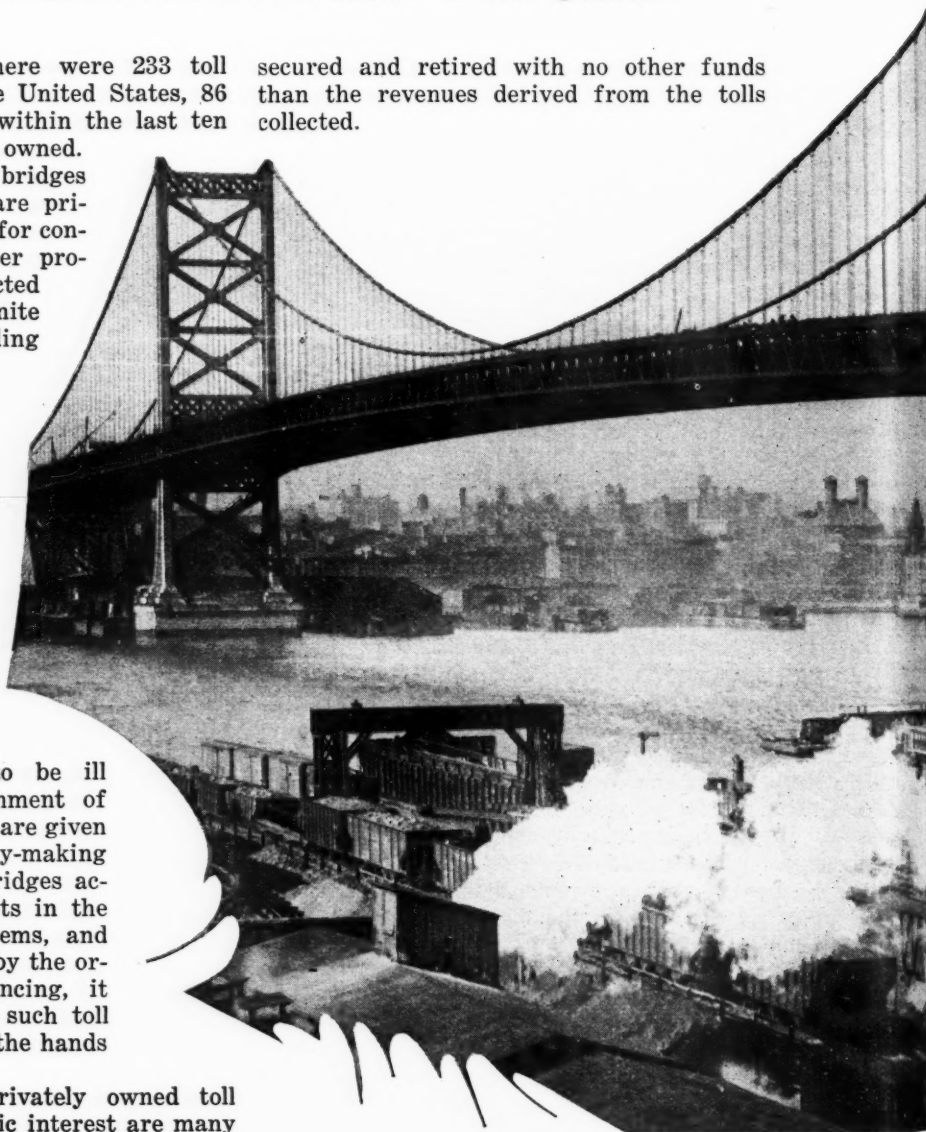
The arguments against the privately owned toll bridge from the standpoint of public interest are many and varied. Among the most important may be listed the following:

1. Toll bridges usually are built at points where traffic is dense, made so by the good highways already developed and built with public funds. The value of the bridge from a profit-making standpoint was created by public expenditures for improvement of the roads which lead to the bridges.

2. Bridges are an integral part of our national highway system which never could have been built except through public enterprise and initiative. The public should not be compelled to pay profits to private bridge operators long after it has paid in tolls for the bridges.

3. Any bridge built by private interests also probably can be built and operated by public interests, there being an active market for revenue bonds which are

secured and retired with no other funds than the revenues derived from the tolls collected.



4. Where the bridges are built by public agencies there is assurance of open competition and awarding of the contract to the lowest responsible bidder, a condition which, authorities say, has been noticeably lacking in much of the private construction upon which the public is asked to pay dividends in the form of tolls.

This whole matter of toll bridges is assuming an importance which every part of the automotive industry may well take time to recognize. Anything which tends to add an uneconomic cost to the expense of operating a motor vehicle cannot be lightly passed over in this era of the new competition of industry against industry for a greater share of the consumers' dollar. In its broader

Automotive Goal

By

Norman G. Shidle

(Directing Editor, Chilton Class
Journal Publications)

aspects the toll bridge question perhaps is one for primary attention from automotive manufacturers, but the dealers and distributors of the country have a very real stake in the matter since the passage of toll bridge bills has been so great, largely perhaps because each one in itself has been a local matter.

While some voices have been raised in Congress against the principle of giving toll bridge concessions to private interests, organized opposition seems not to have arisen, chiefly because of the local character of each individual proposal. It is difficult to interest the Congressman from Oregon in a bridge proposed to span a river in South Carolina or *vice versa*. The tendency is to accept local judgment on local matters. As a result it is probable that a number of the bills have not had nearly as careful scrutiny from Congress as a whole as would bills which in themselves were of more national character.

The report on H.R. 8227, for example, is a case in point. After a summary of the bill, the report states "The bill as amended has the approval of the Agriculture Department, as will appear from the letter attached and which is made a part of this report."

Then the letter which follows from the Agriculture Department closes with this statement: "The department, therefore, would regret to see an authorization granted for a new private toll bridge at this point." (See next page)

Above is the Delaware River Bridge, the world's largest suspension span, which connects Philadelphia and Camden, N. J. It is a toll bridge, built at an estimated cost of \$37,196,971, and was opened to the public July 4, 1926. In the first year 1,847,220 automobiles crossed it, and the revenue was \$2,132,144

The Bear Mountain Bridge, at right, is a toll bridge built by private capital. It is the only highway bridge across the Hudson River south of Albany



TOLL BRIDGE TABOO IS AUTOMOTIVE GOAL

Numerous cases similar to this are to be found in reports of toll bridge bills as presented to the members of Congress. The possibility of resulting confusion seems rather great in view of the haste with which some representatives might conceivably scan bills of this

kind which are purely local in character and have to do with regions entirely foreign to the district which they themselves happen to represent.

There are cases, according to reports from reliable sources in Washington, where the persons getting the privilege of building a bridge have not had the slightest intention of exercising that privilege themselves. Their sole object has been to get a concession at a desirable point and then sell it to the highest bidder.

The Burtess bill (H.R. 107), known as the "General Bridges Bill," now before Congress, is designed better to protect the public interest in the granting of toll bridge franchises by making certain that no such bridges can be constructed on Federal-aid or state highway systems without the approval of the state highway departments concerned. In the case of interstate bridges, if state highway departments fail to agree, the approval of the Secretary of Agriculture becomes necessary. This would insure, at least, that the bodies best informed on road development from a practical and public interest standpoint would have the final word in the important matter of granting permission for the erection and operation of toll bridges.

A bill introduced by Edward E. Denison of the House Committee on Interstate and Foreign Commerce provides that jurisdiction of toll bridges as regards toll rates shall be in the hands of the Interstate Commerce Commission, which body in the past has had no relation whatever to highway development and highway matters in general. It also specifically permits congressional authorizations to be sold, assigned or transferred.

From the standpoint of the automotive industry, however, elimination of toll bridges wherever possible and insistence on government operated toll bridges wherever collection of tolls is necessary seems the most constructive program. This at least is the basis of the program which is being endorsed by the National Automobile Chamber of Commerce, the American Automobile Association and by many influential men in Washington who have been close students of the highway development situation over a long period of years.

The position of the N.A.C.C. is well illustrated in the statement made on this subject last week by Alfred Reeves, General Manager, when he said: "This move toward toll bridges should be blocked before it goes further. Every citizen should write his Congressman asking him to vote against toll roads and toll bridges, never permitting the former and allowing the latter only under the most strict supervision. Unless we are careful



This great bridge, completed last year, crosses Carquinez Straits, an arm of water 2000 ft. wide, connecting Suisun and San Pablo Bays, both parts of San Francisco Bay. It cost \$8,000,000, and will be operated as a toll bridge for 25 years

the national highway system which has been the proud boast of the American nation may soon be but a series of toll gates."

The A.A.A. believes that "While it is unquestionably true that many toll bridges have given and are giving a needed public service

at a fair cost, it is equally true that scores of them levy an exorbitant tribute on the motoring public—a tribute sometimes amounting to 300 per cent of the capital investment." The American Automobile Association is opposed to the granting of toll bridge franchises to private interests, except in such instances where it is clearly proved that units of Government cannot raise money or are unwilling to raise it to construct these bridges in cooperation with the Federal government, even if units of government have to operate such a bridge on a toll basis for a period of time.

The latter point is particularly important from the standpoint of the general public in the locality affected by the bridge. If the bridge is built with the help of Federal aid, the amount of tolls or the length of time over which tolls would have to be collected to pay for the cost of the structure, obviously would be only about half that necessary if the full cost were to be borne by the local community.

It is worth noting, moreover, that practically every agency which has been in close touch with the development of our great national highway system and which has a really detailed knowledge of those matters is opposed to the private toll bridge idea. While no organized opposition to these bills seems to have developed in Congress, as previously mentioned, it should be noted that Cassius C. Dowell, of Iowa, chairman of the Roads Committee of the House, is among those who have publicly questioned the wisdom of private toll bridge grants. Excerpts from a debate which took place on the floor of the House on December 19, 1927, give a good picture of some Congressional ideas on the subject as well as a fairly good summary of the opinion on both sides of the case. These excerpts follow:

Mr. LaGuardia. Is it the purpose of the committee to adopt some policy in regard to these bridge bills? As you gentlemen know, there is no character of bills that come before the House that receive less attention than do these bridge bills. Very often we find very valuable rights are being given away to private individuals or corporations, when as a matter of fact, it has been demonstrated that the best policy for the community and the Government was that the bridge be constructed and operated by the Government or some agency.

Can the gentleman from Illinois inform us what policy the committee will adopt so that we may rely entirely on the committee and not have to examine every bridge bill before us?

Mr. Denison. The policy of the committee is to grant

TOLL BRIDGE TABOO IS AUTOMOTIVE GOAL

small provision at the end of these bridge bills which in a manner provides that the bridges may be recaptured, but it is not a complete piece of legislation and before this Congress passes another bridge bill it should pass legislation whereby the public may under certain conditions restore these bridges to the use of the public free.

Mr. Blanton. We ought to quit passing these toll bridge bills and we ought to follow the law we passed and provide that every bridge that connects a through highway built partly with Federal aid, especially from one state into another, must be a free bridge, and thus encourage states to appropriate money to match Federal aid, so that free bridges may be built with Government and state funds along with the through highway, as the bridge is just as much a part of the highway as any other segment of it.

Mr. Dowell. This is the situation: The Government and the various states are investing millions and millions of dollars in the construction of good roads all over the United States and if Congress is going to permit private persons to hold key positions to build bridges without enacting comprehensive and adequate legislation for the recapture of those bridges to the public use, our people may be compelled to pay tribute to individuals by way of bridge tolls for many years to come.

I have in mind a system of road construction in the United States for the future along the lines laid out under the Federal-aid program and I want the public to be amply protected in the use of these highways. When these private bridges have been built the public should have the opportunity under comprehensive legislation to purchase them at a fair and reasonable price to the builders.

This matter should be called to the attention of members of Congress because over a very large system of Federal-aid highway construction in the United States every effort should be made to keep them out of the hands of a few men after the system has been constructed.

the consent of Congress for the construction of a bridge by the state government or a political subdivision thereof whenever the state or municipality asks for it. We prefer to give the franchise to the Government or a political subdivision, or to some Government agency, like the highway commission; but if they do not ask for it, and if there is public sentiment in favor of the construction of the bridge, and private individuals ask for the authority to construct and build the bridge, the policy of our committee is to grant it.

Mr. Dowell. I want to call the attention of the House briefly to the situation we are getting into on the bridge question. Under the Federal aid law there is a provision that Federal aid can not be given to toll roads, and under the construction placed upon that law the Federal aid is not given to roads which approach a toll bridge.

There is no adequate provision in the law to regulate the price of the toll or to in any manner have charge of the transportation over these bridges, except the privilege that has been given by Congress to permit the corporation or individual to construct the bridge. The Federal Government is providing for a great road system throughout the country. Every state in the Union is at work now building a Federal system of roads, and may we not find the entire Federal road system tied up by a system of toll bridges, whereby the entire public must contribute to private persons in order to travel over the public roads?

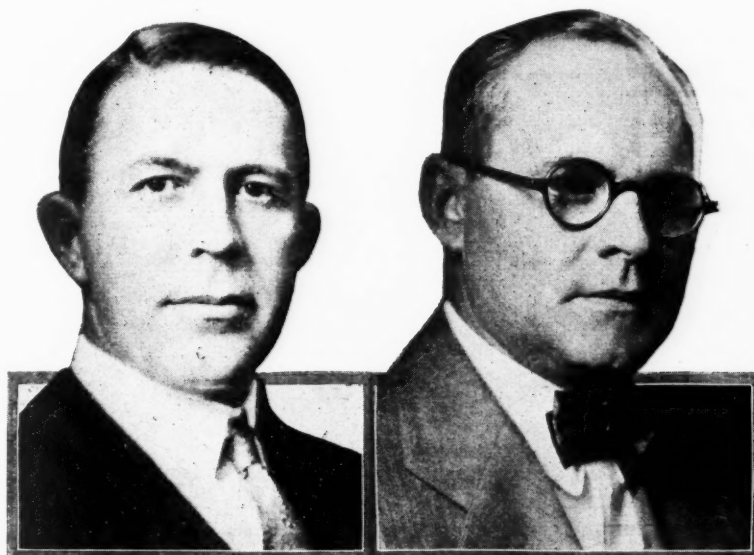
Mr. Dyer. Is there any intention on the part of the committee of which this gentleman is chairman to bring in any legislation that will enable the Government to condemn these toll bridges that are mulcting the people out of millions of dollars?

Mr. Dowell. That is the point I want to arrive at. The bridge proposition is not before the Committee on Roads. There is now before the Committee on Interstate and Foreign Commerce a bill respecting this matter and some legislation should be presented and adopted by this Congress. There is, as I understand it, a

A Used Car Certificate Contest

(Continued from page 25)

Schuyler, assistant manager, "he is a member of our new car sales organization, Cadillac Division, and has been here a good many years, starting in our Used-Car Department. When this certificate plan was announced, he saw the possibilities of picking up a few legitimate dollars on the side and helping the organization at the same time. The result was that every time he ran across anybody who could not afford to buy a new car but



H. M. Stevens, general sales manager, and W. W. Lewis, assistant general sales manager and director of advertising, Cadillac Motor Car Co.

might buy a used one, he turned in the name to our Used-Car Department in exchange for a certificate. In addition to that, he sold a few used cars to old customers who wanted second automobiles but would not pay the price of new ones. Just yesterday, for instance, he delivered a used two-passenger coupe to one of his Cadillac owners. This, of course, entitled him to another ten-dollar certificate, which he cashed this morning."

Will Smithers Puts Business

By
Sherman Swift

*The Story of a Dealer Who Finally
Family and Disap*

MOUTHY" EVANS, small-time con man when pickings were good and plain burglar when they weren't, was wont to boast that he was always prosperous when the racing season started and this year as the goats lined up at the barrier he was running true to form. A fair-sized roll reposed in a convenient pocket and he had a finif on every long shot—but he was dissatisfied because for once he was unable to account for his comparative prosperity. He had the money and knew where he got it, but he had no story to relate to his admiring associates as to why he had it.

But Will Smithers knew.

To any who came in contact with him in his business, Will appeared to be a perfect model for the writers of success stories. He was proud of the way in which he managed his big accessory and parts store and his pride was justified because no one had a better grasp on the reins than he. There wasn't a bit of absentee ownership in the entire organization; Will was the works and it was understood that it was bad luck to make him give an order twice. What he said went. And as a result he was making good—or would have been—if it hadn't been for Mrs. Smithers.

That woman could spend it faster than Will could make it. Her bridge losses alone were large enough to cause one to believe that she was building them instead of playing a game. And it was unusual enough to cause comment when she went to the links for an afternoon and failed to lose an average of a dollar a hole.

Mrs. Smithers, though ably assisted by Will, Jr., and Dorothy, was really the spender for the family. She had encouraged the two children to be extravagant. And as a consequence, Will was the type of down-trodden father whose woes have been immortalized by Balzac and set to music by song writers.

Will, Jr., who was attending a college for rich men's sons instead of being content to go to the local university, rarely spoke to his father except to demand money, and Dorothy, the daughter, out of school and attending finishing classes at the country club, was her mother all over again. Which was no credit to the old lady.

Those who knew what Will had to put up with forgave him for his tempory outbursts during business

hours, while those who didn't know circulated the report that he was a heavy secret drinker with a perpetual hangover.

With the excellent business that Will was doing he certainly should have been able to look the future right in the eye, but as a result of his handicap he wasn't even able to discount his bills.



Illustration
by
Geoff Grier

*And then "Mouthy" Evans told
Smithers the story of his downfall*

His Home on a Basis

Got "Hep" to Himself and His pointed the Sheriff

Finally matters reached such a pass that he couldn't meet certain important notes and had to take the matter up with Squire Chase who, in a previous age, would



have been the villain in an old home play.

Chase liked Smithers. He knew that he was an able merchandiser, just as he also knew where all the trouble

lay, and because of his knowledge in both cases, he extended the notes without comment. Bill left the old man's office feeling somewhat downcast, although this was tinged with a slight feeling of elation at getting his notes extended, which shows better than anything else how low in the financial scale he had sunk. He did not know where to turn for further relief and the sheaf of household bills that had arrived with the morning's mail caused him to think desperately of the river. But he gave that up because it was too muddy. And that wasn't the way to fix things.

He arrived home and in his methodical manner started to hang up coat and hat on the hall rack. His wife, who could always be depended on to be talking if there were anyone to listen, was holding an animated conversation with someone—if a session in which all the talking is done by one person can be called a conversation.

He paused. What was that woman up to now? Evidently something about an automobile.

He moved, heavy-footed, into the room, where he was perfunctorily introduced to a man by the name of Rolls.

"I think we'll take the town car," she said with finality, as following the introduction she turned to Mr. Rolls. "Mr Smithers will send you a check for the balance on the first payment, minus the allowance on the old car."

Mr. Rolls, in the manner of one who had just culminated a profitable deal, took his leave. Mr. Smithers was too nonplused to follow suit. What did she mean by trading in their car? It was almost new. He ought to know. He still had three notes to pay on it.

The telephone rang before he could make up his mind to risk the vitriol of her tongue in demanding an explanation. It was her mother.

After the usual banalities, possibly only to women of her stamp, Mrs. Smithers informed the old lady that she had just purchased a new car. She mentioned the name of one of the better automobiles and Will, busily trying to discover the other half of his evening paper, paused in astonishment.

"Yes," she explained into the transmitter, "the girls that Dorothy go with all have cars and I hate to have her driving around in an ordinary one. Junior's bringing some English boys home for Easter too. I wouldn't care to have them ride around in what is really little better than a tin can. I'm entertaining quite a lot for him, you know, during the vacation season. A dinner dance at the country club, a house party—just a few little affairs like that. So I thought we ought to get a decent car. It isn't as though we couldn't afford it. Will's going to send the man a first payment check tomorrow. It won't be so large; Mr. Rolls was very nice and allowed me \$450 for the other car, etc."

Will gasped. \$450 for their car. It had cost \$1,650 only nine months ago. In despair he slipped into the hall, got his coat and hat and gently let himself out of the house. And if there be any, who, reading this story, consider Will a worm for not standing up for his rights—they don't know women.

After a fairly good dinner at a one-armed lunch room Will walked the stormy streets, wrapped in thought.

WILL SMITHERS PUTS HOME ON BUSINESS BASIS

What could he do? His life was being ruined by this woman who had as little appreciation of what the word "wife" really meant as a carriage starter has of perspiration.

Still musing he made his way to his deserted office and sat down. No man who sees his business and his life being deliberately ruined can be blamed for having dark thoughts, especially when the one most responsible for his troubles is the person above all others who, so the good book says, should be helping him to make good.

Mechanically he removed his overshoes and shook the snow from them. A calendar on the desk caught his eyes. Spring was only a short 10 days away. And ruin, he reflected, was nearly as close at hand.

He leaned back in his worn old office chair and pitied himself. And well he might. His entire family were practically strangers to him. Junior, so friendly as a lad, hardly ever had a word for him. He was developing into a first class snob. And Dorothy, whom he saw infrequently at dinner, appeared to scorn him.

A clock in the neighboring steeple chimed out the hour of 10 and Smithers stirred and opened his eyes. He heard the creak of a door and a sharp breath of air blew in from the hallway. Fully awake he reached carefully into his desk for a revolver. A head appeared around the corner of the door jamb and "Mouthy" Evans stepped stealthily into the room. And into the story.

"Put 'em up," said Smithers hoarsely from his point of vantage in the rear of the desk.

The stranger smiled as he reached above his head. Cognomens are not thoughtlessly bestowed in the underworld and "Mouthy" was confident that he could talk his way out of this somewhat delicate situation.

"You've got me," he laughed in a clear, well modulated voice that caused Smithers to start.

"I don't want you," Smithers said. "Take your foot in your hand and beat it. If there was anything here to steal I'd steal it. How is it a man like you has to steal for a living?" he queried, noting the intelligent appearance of the intruder.

The other laughed, nervously twisting his cap in his hand. And then he told the story of his downfall; a stock story that might have been entitled "From Riches to Rags," in which a spendthrift wife figured prominently. He, to hear him tell it, like Smithers had been a prosperous automotive merchant—and look at him now. "They'll ruin a husband as sure as fate if he don't hold the whip hand," he finished sadly.

It was 12 when the two went out into storm together. A friendly druggist cashed Will's check for \$150. The railroad station was the next stop and here the puzzled stranger was given a ticket, together with the remainder of the \$150—why, he never knew. But Smithers, as he went whistling homeward, his step springy for the first time in years, felt that he had never spent money to better advantage.

The following morning Mrs. Smithers, as she handed him his coffee, brought up the subject of the new car.

"I thought," she explained in the manner of one to whom the wish is father to the deed, "that we could just call it my anniversary present and I wouldn't have any other, although with everything so high I'll shortly have to have a larger allowance."

Will stiffened his shoulders. "Listen," he said grimly, "you'll get no new car and you'll get less allowance than

you now have. Here's another thing, too. I'll not pay one cent to any florist or caterer for parties. And, unless you want to get yourself talked about all over this town, you'll run no more charge accounts anywhere without my sanction, because as sure as you do it, I'll send a personal letter to every storekeeper telling him that I'll not be responsible for your bills."

Too horrified to speak coherently—which shows how horrified she really was—his wife sat staring at him, wondering if he had suddenly gone mad.

The maid pushed her way into the room, her arms filled with envelopes.

"What are those?" demanded Bill in icy tones.

The maid, nonplused, answered with a timorous glance at Mrs. Smithers, that they were invitations for the parties to be held in honor of Junior's guests.

"Give 'em to me. I'll mail 'em," grunted Bill, and taking the mass of faintly scented envelopes, he tossed them in among the blazing logs of the fireplace.

Mrs. Smithers gasped. "I—I—I—" she finally managed.

"And no more maid," grunted Will as decisively as though he had always been known as Bill. "Here's two weeks in advance," and reaching for his check book he made out a check and handed it to the surprised maid. "We'll keep the cook 'cause I got to eat, but one servant's enough."

Mrs. Smithers had at last found her voice and she started to tell Bill all the things that she had told him during the years of their married life. She compared him to the lower forms of life. But for once her vitriol failed to burn. Bill ignored her completely.

"Never mind any more remarks," he savagely interrupted. "Give me that string of pearls you've got on. I got a bill for them yesterday, and they're going back where they came from right now," he muttered, starting across the room, arm outstretched.

Realizing his intent, she unclasped the pearls and passed them to him, shrinking from his grasping hands. Then she burst into tears—for the first time in the 28 years that they had been married. Through a strange sort of daze she heard his even tones.

"Listen," he said, "if you want to help me I'll give you a chance. Otherwise you're out. For the first few years we were married you were a regular fellow. You were a real help-meet. For the past 15 years you've been a 'help-eat' and a millstone around the neck of my progress. I'm just three jumps ahead of the sheriff's hammer and if this keeps on you won't need a route map to find the road to the poorhouse."

"I made up my mind that I'm going to have just as much control of my household as I do of my business. And that's a lot. Things are going to be done as I want 'em done from now on or I'll quit as cold as an iceman's undershirt. If I stay I'm to be boss. This is one 'own-your-own-home' movement that's either going to be successful or bust before it starts. What d'ye say? Either shoot or give me your rifle and get back into the ranks."

Mrs. Smithers gasped, reached for her handkerchief and used it in the manner that no perfect lady ever does.

"Do—do—you," she stammered, "do you think Junior could learn the business—and Dorothy might—might study," she choked on the abhorrent word, "—stenography?"

"Righto," nodded Bill. "And the sooner the quicker."



A MOTOR AGE IMPRESSION = JOSEPH B. GRAHAM
President = Graham-Paige Motors Corp.

Camp on the Trail



IN many retail trades—particularly women's and men's clothing—it is the custom rather than the exception to make a fuss over the season's opening. It finds its highest development in a Spring and Fall Style Show, either given in the store auditorium, or at a local theatre or hall.

The local Automobile Show provides the one big annual outburst of the car dealer—and unfortunately this does not tally with the automobile camping-touring season. Only a proportion of such prospects—the hard-boiled tourists—will enthuse over the season's latest models at the show, during which the weather is probably of the wintry variety.

Against these predetermined prospects may be stacked the imposing number of folk who act on impulses or hunches. They make up their minds at the eleventh hour, when their decisions are influenced mainly by the weather and partly by seasonable selling appeals.

We know how it is because we own a bungalow in a summer colony. In preference to sweltering in New York City, you would think that if people would consider past summers, they'd plan to spend the hot months in a bungalow on the ocean's edge. But no, the majority are born procrastinators and wait for the first heat wave or fine spell before they run down to Sheepshead Bay. A cold or wet spring is a serious setback, and we are lucky to rent the bungalow by June 15, against May 1, as in a normal year.

Our advice to the car dealer is to avoid being too



early or too late in making an aggressive drive on the camper-tourist. The prospect seldom gets his vacation before June, if before July or August. His vacation plans are flexible, and, as we have said before, he is keenly susceptible to seasonable suggestions, especially through the eye, as conveyed in a show window.

Leave a hard-and-fast schedule out of your calculation; have everything ready for the launching of the seasonable drive, so that it will be but a matter of a day or two to get it in final shape when the first warm spell makes its appearance.

This "opening" feature smacks of the theatre—showmanship, in other words—but where would car selling be without a judicious dose of it?

That this is no trotting out of theories is indicated by the experience of Caley Brothers, who, last summer, conducted their Third Annual Outdoor Exhibit.

of the Campers

Window Displays Should be so Planned as to Appeal to the Automobile Tourists and Campers at the Psychological Time

By Ernest A. Dench

Every year they stage in their showrooms an elaborate exhibit redolent of the "wide open spaces." Last year the combined window-showroom presentation took spectators to the North Woods. The woodsy dell was visualized at the background and sides with real cedars—small specimens, necessarily—while the floor, layered with honest-to-goodness turf, was further transformed by fallen, moss-covered logs and boulders. Camp was set up in the clearing, beside which a touring car was parked. Fishing rods, guns and other outdoor equipment were distributed about the setting with studied carelessness.

The highlight of the exhibit was provided by two

frolicsome bear cubs, housed for safety purposes in a large cage, and whose amusing antics proved a treat to spectators. The outdoor exhibit lasted 10 days.

The danger in staging an elaborate exhibit lies in descending to the commonplace afterwards. This is true of Christmas, following which the January displays are usually deadly dull. This danger can be guarded against—and is important, too, since the camping season lasts several months—by peppering up the subsequent displays. Not so elaborate, perhaps, but still with ample lure of the great outdoors. Variations of the outdoor theme can be rung in by introducing the bathing beach, the country club and its golfers, and the picnic.

Oftentimes the car dealer feels he has not the ability to stage a striking display, or lacks the facilities thereof. This is the time to call in a local free lance display man, whose fee will be modest when you consider that he can effect many production economies through long experience, and possibly by lending props from his studio. This is the problem which faced the French Motor Co., Valparaiso, Ind., last summer. Mr. French had the idea, but was stumped at the execution of it. He therefore had the happy idea to prevail upon James L. Kmoch, display manager for a local department store—the Specht-Finney Co.—who agreed to install the display to his satisfaction.

The painted scenery undertaken in Mr. Kmoch's studio was a lake scene for the background, showing fishermen in a boat on the lake. Mr. Kmoch carried this environment right into the window itself with a parked, new model coupe, human interest being imparted with a young woman in a middy and knickers, seated on the running board beside the open door. She had a magazine in her lap, and was regarding the portable camp table, set for a meal, with interest. The man in the party—dressed in khaki—stood over to the right, about to try his tackle in the lake. A camping cooking outfit was also in evidence near the car. The floor, spread level with

(Turn to page 41, please)



The correct camping atmosphere is achieved in both of the window displays shown above. The reader will, of course, make allowance for the fact that the cars are of the vintage of another year, while noting that the inexpensive "props" may be used to advantage with the models of any year



At right is an interior display of camping accessories

The Giant of the In

*He is the Retail Sales Force and
telligent Direction to Do
Most Pro*

By L.

THE turnover in the ranks of the retail salesman is tremendous and is due to the fact that his income is not sufficient to take care of his needs. Never in the history of the automobile business has it been more difficult to get and keep a proper quota of salesmen than it is today. In addition, the personnel of the men was never so bad. If records denote progress and its direction, it is easy to see that something has decayed in Denmark.

The average income of 14,143 out of 16,062 salesmen in one organization was not more than \$30 per month. Think of it! More than 88 per cent of 16,062 salesmen averaged in sales less than one car in two months. What value were these men to the factory or the dealer and why were they not given some useful work by their dealers or sales managers while they were employed?

Lack of scientific organization together with the improper directing of their efforts is responsible for this deplorable condition. Retail salesmen spend most of their time waiting on prospective buyers much like the clerks wait on the customers of the 10-cent stores. If they do not make the sale at the store, they secure the customer's name and follow him up, often to find that he has found some other dealer who paid his price for his old car.

The percentage of car buyers found by salesmen is exceedingly small, because of the lack of any well-directed plan for securing them. Salesmen cannot be held responsible for this condition. Neither can they be expected to work out an individual plan of their own. The most optimistic automobile men agree that salesmen do not spend more than 50 per cent of their time in productive work. Is it therefore any wonder that their incomes are so small and that the tremendous turnover continues?

The constant cry of the manufacturer is "More man power, more salesmen." From whence are we to get these men and, from our records, of what value are they to us when we do get them? We expect them to find their own prospects, (outside of what they can pick up on the floor) and we have left them to their own devices, with the result that most of them earn less than a private in the U. S. Army; yet they must feed and clothe themselves so they may appear like prosperous business men when they interview our customers. Do we expect them to pull the heavenly bell cord every time they get cold or become hungry?

It has become an axiom that three years of idleness in the army unfits a man for any useful occupation in life, but even in the army the men are given a little work to do each day. More men, who might otherwise have been useful manipulating a wheel-barrow or following one of McCormick's patents around a 40-acre field, are ruined every year by automobile dealers than were ever ruined by the army in a decade.

Why? Because dealers make loafers out of them.

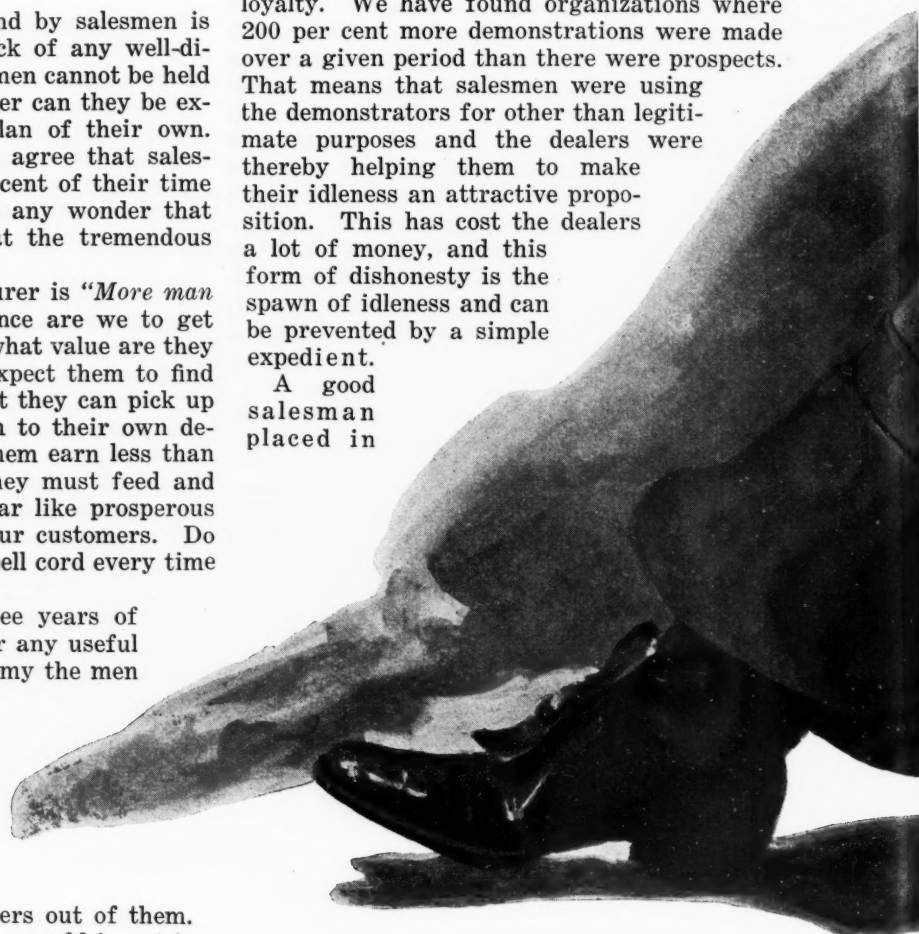
If retail sales managers and dealers would invest in a good dictionary and look up the word "manager," they might become impregnated with a new idea. Ask deal-

ers to pay salesmen a salary and you will hear a cry that will ascend to the highest heaven. The reason for that is because they lack confidence in their ability to supervise salesmen. They want the salesman to take all the chances.

Paying salaries will not better the situation so long as dealers and sales managers lack faith in their ability to direct their salesmen. A drone who eats the honey is infinitely worse than one who does nothing but buzz. The trouble with salesmen is not so much whether they are paid a salary or a commission, but it is idleness brought about through lack of direction.

Idleness not only results in laziness, but it breeds dishonesty and discontent, and discontent begets disloyalty. We have found organizations where 200 per cent more demonstrations were made over a given period than there were prospects. That means that salesmen were using the demonstrators for other than legitimate purposes and the dealers were thereby helping them to make their idleness an attractive proposition. This has cost the dealers a lot of money, and this form of dishonesty is the spawn of idleness and can be prevented by a simple expedient.

A good salesman placed in



an organization of idle men will either become a loafer or he will leave. Since a man's natural tendency is to

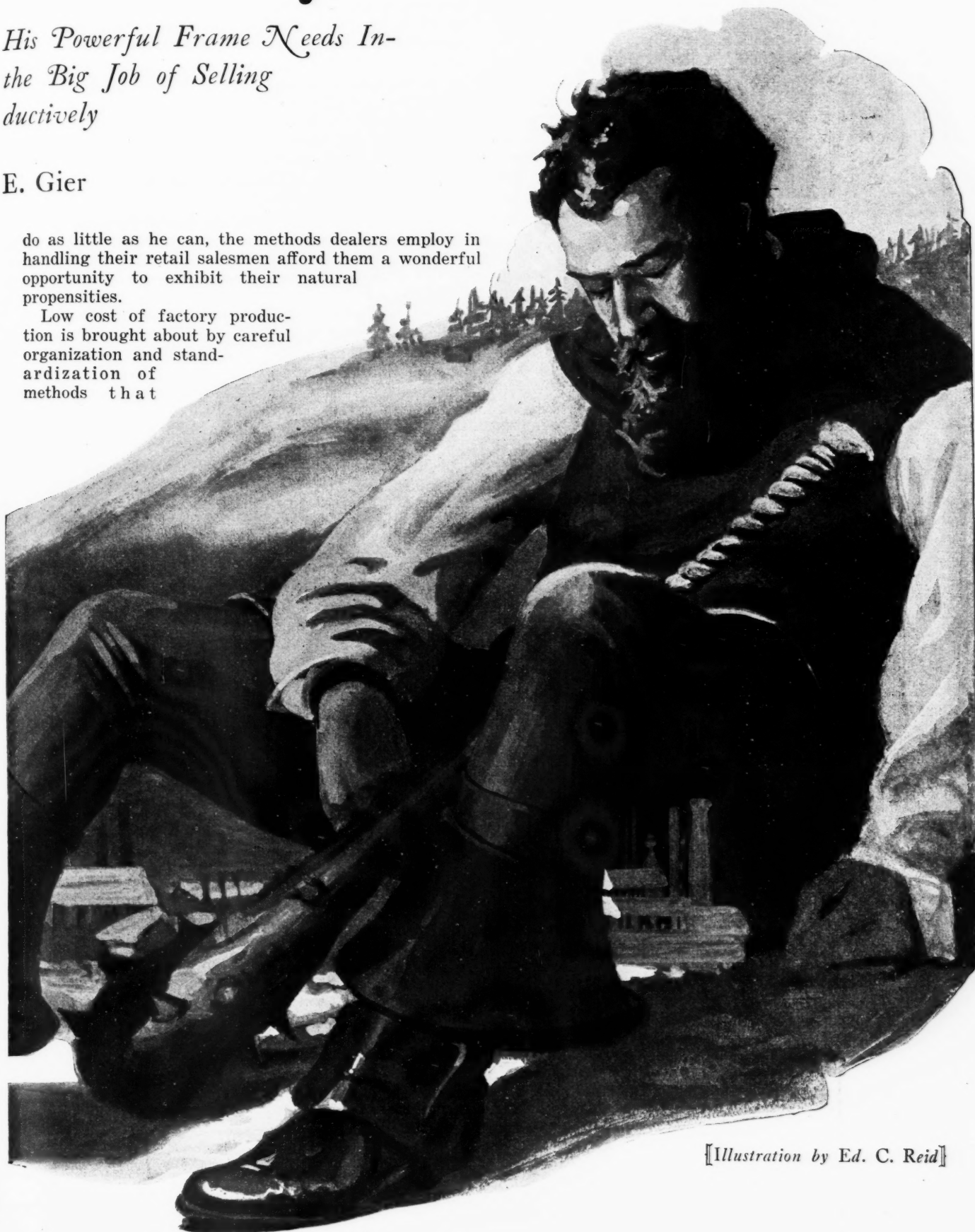
Industry Snoozes

*His Powerful Frame Needs In-
the Big Job of Selling
ductively*

E. Gier

do as little as he can, the methods dealers employ in handling their retail salesmen afford them a wonderful opportunity to exhibit their natural propensities.

Low cost of factory production is brought about by careful organization and standardization of methods that



[Illustration by Ed. C. Reid]

THE GIANT OF THE INDUSTRY SNOOZES

eliminate waste of time, material and equipment. Each employee becomes an expert in his line. He is given a specific thing to do, a particular place in which to do it and he is fully prepared and equipped with all the necessary material and tools, together with a complete knowledge of the best methods to use.

Rapid changes are being made in the automobile industry; competition is becoming keener; dealers bidding against each other for business are cutting their profits to the point of jeopardizing their investments. It is therefore high time that the dealers begin to organize their sales forces on a sound business basis if they would continue to sell cars at a profit. To do this, they must know how to reach the new car buyers and employ the most efficient selling method, before buyers become shoppers.

This can be brought about by converting the drones into workers, and the place to begin is with the dealers and sales managers, inasmuch as the tremendous turnover in the ranks of the retail salesmen renders abortive any plan for their training unless that is done.

Good retail sales managers are very scarce. They are not born any more than are doctors, lawyers, dentists or other professional men. Sales managers and dealers must be trained so *they* will know how to operate on a definite working schedule and place their salesmen on a standard efficiency basis. This will make it necessary for each man to do a given amount of work each day or he knows he will automatically eliminate himself from the organization, and we know that if we can get the men to work intelligently, results are bound to follow.

Salesmen are willing to do anything within reason to increase their earning power and *they will work with enthusiasm for a boss who knows how to keep them busy 8 hours per day.*

Some manufacturers may say: "We have installed good systems which have been approved by the dealers, but they have expected the system to do the work like Cascarets (while they sleep). Perhaps we have given them too much system, and it has acted as an emetic rather than a purgative."

On the other hand, I have yet to find where a standard efficiency system for salesmen has ever been introduced by any automobile company that will enable salesmen to find prospects and promote the best interests of salesmen, dealer and manufacturer. In fact, many of our prospect systems have defeated their purpose because they required too much clerical work, were too complicated and did not provide a means for securing additional prospects, which is so necessary to increase sales.

The general sales manager of one of the big manufacturers in Detroit told me that their retail salesmen had plenty of prospects. Upon investigation I found 10 salesmen in one of his dealers' establishments who had not sold a car during an entire month. These 10 salesmen may have had plenty of names on their work sheets,

but it is positive that a cigar store Indian mated to a milliner's sign could have accomplished no less.

Automobiles have become a necessity the same as houses, food or clothing, and their purchase is governed by the same motives. All Americans are interested in automobiles and *they have acquired their automobile education from advertisements in newspapers and magazines, the testimony of others and their own experience.* That much of this information is unreliable is quite evident.

Millions are spent by automobile manufacturers through the medium of advertising in order to influence the buying public and create favorable public opinion for their cars.

All manufacturers have access to the same medium of advertising. The experts who write the ads often make conflicting claims. Fifteen manufacturers advertised in one edition of the Detroit papers. Three claimed their engineering achievements surpassed all others. Five assured the public that their cars excelled in speed, while three insisted they outsold their competitors.

The average man does not know what to believe, so he closes his eyes and decides to buy from the dealer who will allow him the most for his used car. When automobile purchasers become shoppers, they have the hearty support of the dealers, who bid against each other for business.

Manufacturers often stimulate business by making drastic changes in models, but this stimulus is only temporary. When periods of depression hit the country, sales drop off in all lines in proportion to the popularity of the cars.

If the dealer's sales organization were a prime factor in building up his business, its influence would become apparent and his company would become a leader in times of depression instead of going to the bottom with all the rest.

The fact remains that the income of every man in the organization from the president down is in a large measure dependent upon the efficiency of the retail salesmen. We are willing to concede that a salesman who has not sold a car for 30 or 60 days is not helping to pay salaries, is not even helping himself or his dealer and is usually an anarchist in the organization.

The bee arriving at the flower after the honey has been extracted by another does not hasten back to the hive and hold an indignation meeting with other workers and eloquently cuss the management, the queen and the business in general; but did you ever listen to the automobile drones?

If dealers will adopt and enforce a standard efficiency system, they will find that their aggregation of pusillanimous drones will be transferred into an organization of enthusiastic workers.

The great giant of the industry (the retail sales force) is asleep. Shall we awaken him and put him to work?



About Aluminum Pistons and Invar Struts

It appears that engine pistons expand and contract with heat or the lack of it.

It also seems that this tendency can be controlled by crosspieces (struts), which do not vary with the temperature and are therefore invariable (invar). So there you are, crosspieces to keep pistons from varying, invar struts.

—Nicholas Trott, in The New Yorker.

ALTHOUGH the story of aluminum pistons for automotive engines dates back to 1911 in this country, it has only been during the last four years that the high thermal expansion and low resistance to wear of these aluminum pistons have been overcome. A solution, consisting in the combination of two special alloys and the development of heat treating for aluminum alloys, was introduced by the Bohn Aluminum & Brass Corp. in January, 1925. The product was the now well-known invar strut piston designed by A. L. Nelson and offered to the trade under the name of "Nelson Bohnalite" pistons.

The enormous growth in popularity of the aluminum alloy piston since that time is reflected in the fact that at present there are being produced 50,000 Nelson Bohnalite pistons daily.

The Nelson Bohnalite is the skeleton type of piston, cast of light aluminum alloy with integrally cast nickel-iron alloy struts or braces having one-fifth the expansion of ordinary steel, similar in composition to the material commonly called invar steel. The struts themselves are cast into the piston in such a manner as to control the expansion of the skirt. The largest percentage of heat in the piston head passes out through the piston rings to the cylinder walls. The remaining heat passes through the piston alloy webs and then to the cylinder walls or is dissipated through the lubricating media in the engine crankcase.

Nelson Bohnalite pistons are ground slightly tapered in the skirt from top to bottom to take care of slightly higher expansion at the bottom of the skirt. At the



top of the skirt the expansion is predetermined by the design of the strut to give practically the same expansion as that of the cast iron cylinder. This is reflected in the fact that for 3-in. pistons, for instance, a clearance of .0015 is said to be ample for the most severe running conditions.

In combating the excessive wear due to the comparative softness of the alloy, it was found that wear was largely relative to the softness of the alloy used, the harder the piston the less the wear. This led to further experiments in trying to harden aluminum alloys and it was found that such an alloy containing approximately 10 per cent of copper and lesser amounts of other metals could be hardened by heat treating, resulting in raising the wear-resisting qualities.

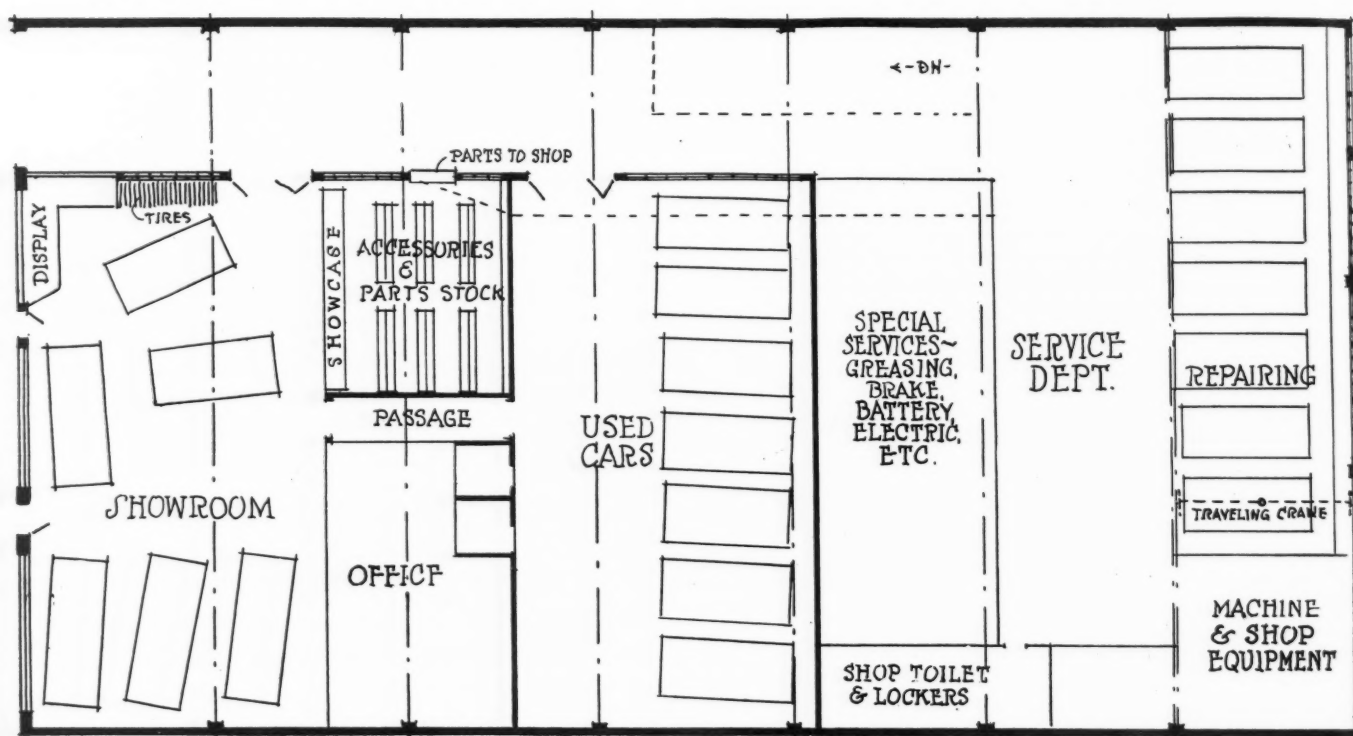
According to the figures in the 1928 statistical issue of *Automotive Industries*, 56.6 per cent of all passenger car models are now equipped with aluminum alloy pistons, of which 45.8 are of the strut-controlled type. With more passenger car chassis yearly in the truck field and with the higher speed of trucks, more of these pistons are being used here also.



A. L. Nelson and the invar strut piston he designed, which is offered to the trade under the name of Nelson Bohnalite

Southern Dealer Plans to Build on Hillside

By Tom Wilder



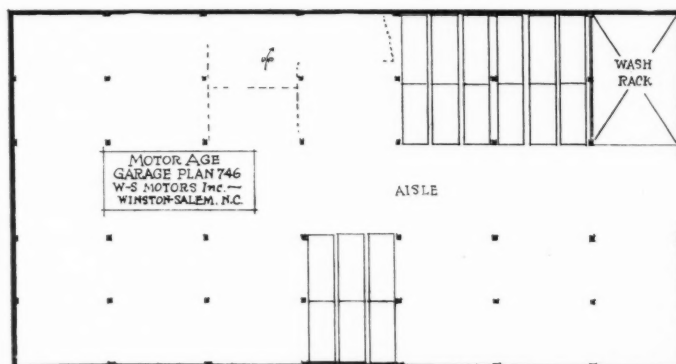
One of our dealers is planning the erection of a new garage building to occupy a lot 80 x 150 ft. They are desirous of securing recommended floor plans for a garage of this type, which is to have a first floor entrance on the street and a basement entrance from the rear. We would consider it a favor if you would communicate any information available to W-S Motors, Inc., 219 N. Main St., Winston-Salem, N. C. We would also appreciate receiving a copy of your letter for our own information.—Hudson Motor Car Company, Detroit, Mich., P. E. Jones, Service Department.

A BUILDING as large as this will be deserves a great deal of thought because the business it will house has probably been expanding for several years and has undoubtedly developed certain traits or methods of handling the various lines which are satisfactory to the management.

For MOTOR AGE to jump in and say this and that ought to be thus and so would be a mistake, for there are hundreds of firms doing things in hundreds of different ways, most of them—not all—more or less right or at least satisfactory and getting results.

With absolutely no background of information relative to your method of doing things, about all we can do is to suggest a general layout that would fit an average business and let you develop it to suit yourself.

We have assumed that this is an inside lot and being



on a hillside as it is, exposure to a side street would make very little difference except in the amount of light that can be gotten in through side windows. The possibility of display along the side would be something, but not great, as the grade would soon carry the observer too low to see.

Assuming that it is an inside lot the basement would be all dark except a narrow strip across the back end and consequently unfit for service or anything except storage. This is unfortunate, as the average dealer does not need 50 per cent of his total area in storage. Special shops, such as battery and electric or radiator repair, might be installed in the rear bay, the work being sent down from the main service shop above by dumb waiter, but that would not be the best

(See next page, please)

CAMP ON THE TRAIL OF THE CAMPERS

(Continued from page 35)

gravel, was flanked at the side by a boarder of artificial grass.

"To Make Camping a Pleasure" read the one and only sign in the window.

The right-hand sidewall was adorned with a scenic panel of a golf course, with the clubhouse in the background, and a car on the roadway. The left-hand side wall was looked after with a small white trellis fence, hung with several drying bathing suits—a deft bit of atmosphere.

Two days after the display was installed, the featured car was sold.

There is, it will be readily conceded, much of a sameness about automobile camping displays. In garnering new twists to a well-worked theme for this article, we had to scrap a lot of otherwise worth-while displays. Were we to give you details of them, your reaction would be "they are practically identical save in the minor details of conception."

Is it a grave mistake to always present all the joys of touring and camping with none of the discomforts?

These discomforts do not necessarily reflect on the car; in fact, some hard-boiled outdoors men revel in the hardships. Such real he-men glorify in being able to go back to more or less primitive modes of living. One car concern, to our personal knowledge, firmly believes in depicting the rough with the smooth, and this is the Whittier Studebaker Co., Billings, Mont. George Hansen, manager, realistically reproduced the atmosphere of the Arizona desert. So convincingly, in fact, that a local newspaper reporter was inspired to make the following outburst, which reads like the introduction to a "Western" fiction story:

"Burning heat and blinding sun. Scorching sands—endless sands. A scorpion darting under foot. Boulders burnt brown by the dancing rays of many suns. Grotesque cactus, bristling guardians of the

desert. The whitening bones of a luckless steer. Mesquite and sage brush—the purple sage and far distant the welcome green of the water hole—the haven."

The setting lived up to the picturesque description, and was the talk of the town while it was in, and for a long time after.

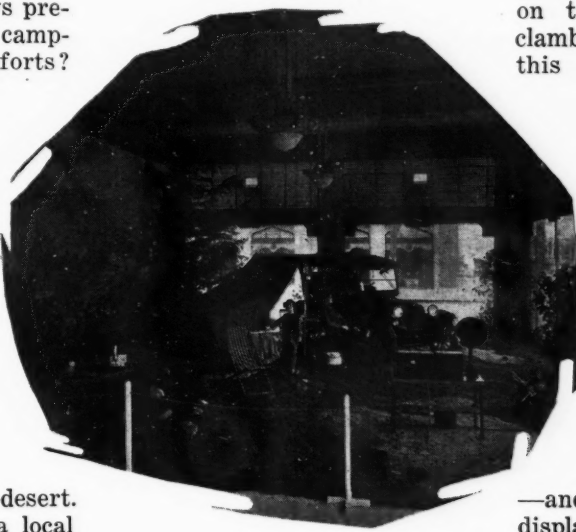
Another type of summer car display is the hard-to-define rural setting. It gives a vista of the charming countryside, but is not identified with any particular phase of outdoor life. Such a theme has its good points in that it is not limited in appeal to any one type of outdoor enthusiast, such as the camper, golfer, angler, etc. An excellent version of this setting was handled by the J. W. Thompson Ford Agency, Springfield, Ohio. A low cement wall, with ledges and ornamental posts encircles the window-showroom. Above the cement wall rose a spiked, imitation iron fence, with a wide gate of the same construction. Summer

flowers in green-painted tubs "grew" on top of the posts, while vines clambered along the fence. Inside this garden, on each side, was a narrow stretch of turf, with a gravel drive occupying the rest of the floor space. Here a touring car was parked.

The temptation is great to resurrect the feature display from last summer, but it will be "old stuff" to the natives, who form the bulwark of a dealer's prospect list. On the other hand, the "props" employed in the same are lying idle in the storeroom, so why spend more money for new decorations? The wisest plan

—and the one followed by the best display men—is to transform the layout, using only part of the props and incorporating them with new ones, so that the finished setting is cleverly disguised as a brand new

one. The car dealer has—or should have—several such trims during the peak of the outdoors season; he has abundant scope to revamp most of his old display aids, employing a few in each new trim.



A camping display that includes the conveniences of outdoor life

Southern Dealer Plans to Build on Hillside

(Continued from previous page)

arrangement and we would suggest restricting the services on this floor to washing on one side of the entrance and greasing on the other side. For greasing, a pit could be built with two runways across.

All the sales and service is confined to the upper floor, the main new car salesroom in front with offices and accessory store between it and the used car showroom immediately behind. If larger showroom is needed in either the new or used division, the offices could be arranged on a balcony. Although the accessory store must be kept on the main floor, the parts stock could be kept above with all excess accessory stock. A stock boy on the balcony would fill orders through the help of a dumb waiter.

The service department is large enough to take care of a tremendous amount of repair work. It would supply space for the activities of 15 or 20 men because it would be all working space.

If there is considerable distance to go from the front door around the block to the alley entrance, it would be advisable to install a ramp. The dotted lines suggest a ramp installation that would fit the case best.

Since the used car problem is one of the branches of motor car sales that cannot be eliminated so easily, it must be taken care of and to aid in this respect we offer another suggestion that might help out the whole problem. That would be to fit up a basement showroom for used cars using the two forward row of spaces between columns about 40 ft. in depth. Have a nice wide stairway down to it and have the room itself well lighted, ventilated and decorated to offset basement idea.

READERS' CLEARING HOUSE

Questions Answered By C. Edward Packer

Mercer Timing

Please give me the valve and ignition timing in degrees for 1923 Mercer six-cylinder car. The flywheel on this car is only marked dead center, but I would like this information given in degrees.—U. S. Jackson, Holliday's Cove, W. Va.

ON the valve timing in this car the intake opens 4 deg. before top center and closes 45 deg. past bottom center. The exhaust opens 52 deg. before bottom center and closes 5 deg. past top center. To time the engine rotate the crankshaft until No. 1 piston is at top center on the compression stroke. With the timing lever in the fully retarded position, the driveshaft of the magneto should be rotated in the direction in which it will be driven. The circuit breaker should be closely observed and when the contacts are about to separate, the drive gear or coupling should be secured to the driveshaft of the magneto. Care should be taken not to alter the position of the magneto shaft when tightening the nut to secure the gear or coupling. Remove the distributor block and determine which terminal of the block is in contact with the finger and connect the plug wire leading to No. 1 cylinder to this terminal, connecting the remaining plug wire in turn according to the firing order, which is 1-5-3-6-2-4. In order to obtain the utmost efficiency from the engine, you may find by experiment that a little deviation from the regular setting will improve performance.

It is the Voltage That Counts

I have a question on which I need some help. Would it be possible to use two 6-volt Dodge batteries instead of one 12-volt battery on an old Dodge car using the 12-volt system? Would the generator be strong enough to charge these two batteries?—Leo Kruger, Box 650, Dresden, N. D.

IF you place two 6-volt batteries in series you will have the same effect as though you were using one 12-volt battery. Of course the capacity of these two batteries will be considerably in excess of the capacity of a 12-volt battery. Also, you will probably have some difficulty in making the installation due to the size of two batteries as compared to one 12-volt battery. Aside from that, however, the installation should be a success, as the generator

will be capable of charging this battery and the battery will not be too strong for the starting unit of the car.

I have had an argument here as to whether a battery could be damaged if it were put on the charging line in the reverse direction. That is, the positive terminal of the battery connected to the negative terminal of the charging equipment.

A BATTERY will be seriously damaged if it is put on the charging line and allowed to remain for any length of time with reversed connections. The composition of the plates is actually changed by this action and a battery that has been so abused will have a considerably shorter life and much lower capacity than if it had been charged in the correct manner. That is, positive to positive and negative to negative.

Voltage Has Its Ups and Downs

The boys in our shop got into a discussion about the stepping up and stepping down of voltage in power lines. This looks impossible to me, but one man claims that the light company can run high voltage to the transformer and cut it down to a lower voltage and then run this lower voltage to another transformer and step it up to the same voltage it started with. It doesn't sound so good to me but I told them I would write you anyway. Can it be done?—Illinois Subscriber.

IT can be done. In fact, it is done regularly. It is not at all unusual to transmit current across country at a voltage as high as 22,000. It may then be cut down to 2200 or 220 volts. This is done by means of transformers. Should it then be desirable to get the

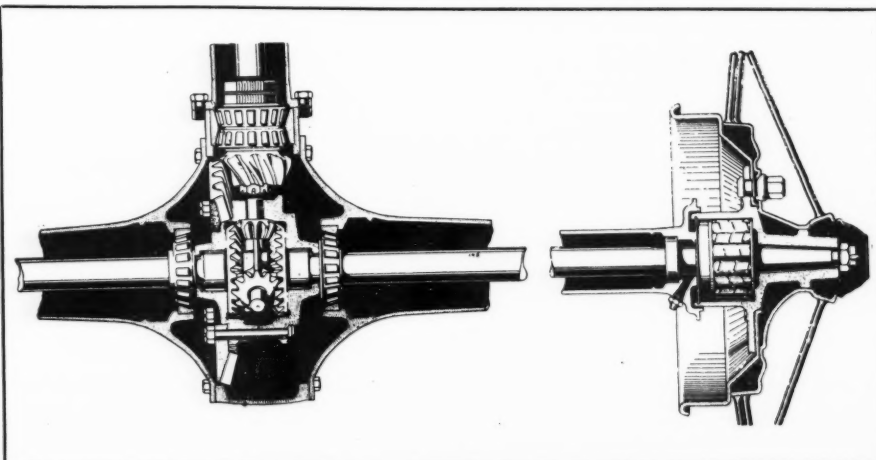
voltage up again this is readily done by means of another transformer and the former voltages of 2200 or 22,000 are again available for cross-country transmission. As the efficiency of these transformers is approximately 99.7 per cent, you will appreciate that the losses are negligible. Transmitting current at a high voltage has a big advantage in that the drop or loss per mile is much less when transmitting at a high voltage than at a low voltage.

Ford Model A Axle Details

We notice that MOTOR AGE states that the new Ford Model A has a $\frac{3}{4}$ floating rear axle. Please answer the following questions:

First, can this axle be taken out of the car without taking the housing apart? Second, if this axle should break in the center, would the wheel come off? Third, is it, or is it not a $\frac{3}{4}$ floating rear axle?—John N. Sauder Auto Co., New Holland, Pa.

WE presume that when you say, "can the axle be taken out of the car without taking the housing apart," that you refer to the axle shaft. Neither shaft can be taken out of the rear axle without removing one housing. We are showing a cross-sectional view of this rear axle. Each axle shaft and its differential gear is one piece. To remove a shaft the best procedure is to remove the left axle housing. The differential is then exposed and can be opened up, thus releasing the shafts. If the shaft should break it would be possible for a rear wheel to come off. As we said several months ago in describing this car, this rear axle is of the $\frac{3}{4}$ floating variety.



[READERS' CLEARING HOUSE]

Good Battery Makes 'Em Start

What causes a 1926 Master Six Buick to be hard to start in cold weather? If 10 above zero the car will not start unless hot water is poured over the manifold. A new coil was put on and ignition points were put in, but nothing seems to help this car. It has been driven 14,000 miles.—Illinois Subscriber.

IF you are using heavy oil the engine will be hard to turn over. As a consequence the overload on your battery will be so great that the voltage will drop so low that the spark will be weak. Also a cheap battery that has low capacity as a result of few or small plates will work the same way. The engine turning slowing will not vaporize the gas that passes through the carburetor so that you have a poor mixture and poor spark. We would suggest trying a well-charged battery of reliable manufacture.

"Ain't That Hot?"

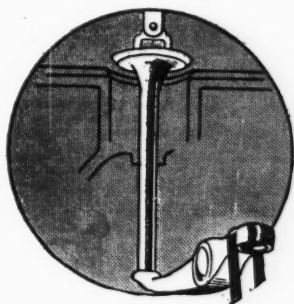
I am having trouble with a Special Six Studebaker catching on fire when first starting when the engine is cold. When the engine is warm this does not happen. I have never been able to find out the cause of this trouble. My guess is that the inlet valve is sticking and explosion goes out through the intake manifold. This does not happen when the choker is not used a great deal. Please suggest possible causes of this trouble which I am experiencing.—Cleo Cannon, Prairie City, Ill.

THERE is no doubt that the fire is caused by valve trouble. A badly fitted intake valve or one that is broken or sticking, could be responsible for this. We would suggest that first of all you see that the valves are in good condition. Then when you are sure that they are seating properly and that the springs on them are all in good shape, it would be well to check the timing. If the spark should occur while the intake valve is open, the trouble that you are having would be the natural result. On this car the inlet should open $7\frac{1}{2}$ deg. after top dead center and the exhaust should close 11 deg. after top dead center. With the breaker box set in the fully retarded position, the breaker point should open at top dead center. Another possibility is that the leak in your high-tension wiring or in your distributor cap is permitting a spark to jump in a cylinder that is taking a charge instead of firing the one that is under compression. You will appreciate that it is more difficult for a spark to jump under compression than it is when the cylinder is not under compression. Consequently, if the wiring is in bad condition or the distributor cap has a crack

SHOP KINKS

Ideas that have proved useful

IN grinding end valves on an over-head block, I arrange the block as shown in the sketch. The rubber band keeps a light tension against the rocker arm so that the valve rises from its seat when the pressure is relieved. I find that this is a big help in keeping up this job.—J. C. Perfect, Johnstown, Ohio.



Readers of MOTOR AGE are invited to submit ideas that they have found useful in doing some particular service job in the shop in a better or quicker way. For each one published \$2.00 will be paid. Whenever possible the idea should be accompanied by a sketch or diagram from which a drawing can be made.

or electrical leak in it, the current would naturally tend to leak across and go to the cylinder that was not under compression. Naturally, this could be the cause of fire in the carburetor. We can't say just why this condition is more noticeable or more bothersome when the engine is cold than hot, but suspect that the increased choking necessary when the engine is hot results in an excess of gasoline in the carburetor which increases the chances of fire.

A Hot Point

To settle an argument I wish to know what part of the average automobile engine reaches the highest temperature. Some say the piston head, while others claim valves or piston pins.—Davis Garage, 67 Main Street, Perry, N. Y.

THE head of the exhaust valve is the hottest part of an internal combustion engine. The piston head gets hot, but you will appreciate that it is cooled from the under side by oil spray and heat is also carried off by the skirt of the piston through the cylinder wall.

Jewett Leaks Oil From Camshaft Bearing

I have a 1922 Jewett, motor No. 17850, that leaks oil past the disks or oil plug on the rear camshaft bearing. Please advise me as to the best way to replace this. Does the engine have to be removed? Also about how long does it take to do this job in a modern shop?—A. B. Erickson, Jackson, Minn.

IT is not necessary to remove the engine to do the job which you refer to. It is necessary to block up the engine, and remove the transmission, clutch and flywheel. This exposes the cap at the end of the rear of the camshaft bearing. As a rule the best procedure is to clean this cap and the adjacent metal off carefully and solder the cap into place. Some shops use a mixture of litharge and glycerine and smear it over the cap, but we would recommend soldering. A job of this kind takes five or six hours as a rule.

What is a Safe Charging Rate?

As I have no power line so that I could use a regular charger, I have hooked a couple of automobile generators to a line shaft. What would be a safe rate to charge regular radio batteries? Sometimes I am using this line shaft for short periods and again I may have it running for several hours and I want to be sure to have a safe charging rate. Also, would it be possible to put some kind of field resistance into these generators to alter the rate so that I could charge at the maximum if I were running the line shaft for a short time and at a reduced rate if I were going to run it for a number of hours? What kind of a rheostat could I use? How hot can a battery get before there is danger of injury?—John L. Nelson, Symerton, Ill.

THE rate at which you charge these batteries is immaterial, so long as the temperature does not rise above 110 deg. That temperature is not to be guessed at, but should be accurately checked with a dairy thermometer placed in the center cell of the battery.

A simple way of controlling these generators is to place a two-ohm rheostat in series with the field circuit. That is, you will have a separate rheostat for each generator. You should then place the third brush as far in the direction of armature rotation as it will go. This will give you the maximum output when the rheostat is so turned that it imposes no resistance in the field circuit. To reduce the charging rate it is then merely necessary to turn the rheostat until sufficient resistance has been added to the field circuit to reduce the charging rate to the point where the batteries no longer overheat.

[READERS' CLEARING HOUSE]

Engines Do Not Make Oil Loose Pin Makes Pressure Vary

I have a complaint with one or two cars that has me stumped. The owners claim that they gain oil in the crankcase and in a run of 500 miles will gain perhaps three pints. These cars operate perfectly, are practically new and give good gasoline mileage. They are never run on long, hard trips on the road and are carefully handled. What I want to know is this, if you should measure an even gallon of oil and pour into a crankcase and run 500 miles, would the heating this oil is subjected to cause it to expand and measure over a gallon when drawn off, provided the engine consumed none of it?—Bell-More Chevrolet Co., W. R. Moore, manager, Munday, Texas.

NO automobile gains oil from running. True, the level in the crankcase may rise, but the gain is not in oil. It is fuel in the oil that has increased its level. There is a possibility that some kinds of oil might froth or foam, but even if that were the case and the crankcase were drained while hot, these bubbles would quickly rise to the top and breaking would cause the level in your oil measure to go down a bit.

You may be sure that what you have in these cars is crankcase dilution. This may be caused by a number of things. One that you mention is quite common, namely, the fact that these cars are never used on long, hard trips. In other words, they are usually operated below their most efficient temperature. Operating as they are, the choker is probably used excessively. This draws raw gasoline into the combustion chamber. This gasoline condenses and works down past the piston into the crankcase. Too rich a mixture is another common cause of crankcase dilution. An engine that misses will also quickly accumulate considerable dilution in the crankcase. This is due to the condensing of the charge of fuel instead of the burning of it each time the engine misfires. This condensed charge works past the piston to dilute the oil. Idling an engine is another cause of excessive dilution. The reason for this is that at idling speed, insufficient heat is produced in the combustion chamber to thoroughly consume all of the incoming fuel. Also, at low speed fuel is inclined to condense in the intake passages and then when the engine is suddenly accelerated, this raw fuel is drawn into the cylinders.

67 M.P.H. is Pretty Good

We have in our shop a 1927 Master Buick roadster which will only make 67 m.p.h. Would the speed be increased by installing a 1928 model camshaft?—O. R. Justiss, Slaughter Motor Co., Lubbock, Tex.

THE 1928 camshaft will not increase your top speed.

Some time ago I wrote you about oil pump trouble on a Series E Oldsmobile. In line with your suggestion I tried a lighter oil, thinking that that was the reason it did not circulate through the pump as it should. This, however, did not clear up the trouble. I have taken the screen entirely off of the suction pipe with no better result. The gage still flutters around about 15 until the engine has become thoroughly hot—which takes 15 to 20 miles of running. The weather here is not at all cold now but this seems to make no difference in the action. —Oregon Subscriber.

ANOTHER possibility is that the pin carrying the idling gear in the pump on the side of the engine is loose. Looseness of this pin would permit air to be drawn into the pump. Naturally it is easier for the oil pump to pump air than it is to pump oil, with the result that you would get a flickering gage reading. The cost of an entire new pump housing is in the neighborhood of \$1.40, and if the pin in your housing is at all loose, we would suggest that you try a new housing. Another possibility is that there is too much clearance between the ends of the gears and the pump housing. To overcome this, place a piece of emery cloth on a flat surface and face the pump housing down until the gears are exactly flush with the housing. Then, when you put the gasket in position there will be sufficient clearance between the gears and the housing. Looseness between the gear and the housing is one cause of low or uneven oil pressure.

The oil pressure on this car should be in the neighborhood of 30 to 35 lb. even when the engine is thoroughly warm and running at about 25 to 30 m.p.h. The oil regulator is on the left front side of the engine. To increase the pressure the screws should be screwed in. If that does not give sufficient pressure, remove the spring by taking the screw entirely out, being careful not to lose the ball that is behind it, and stretch the spring slightly. This will raise your oil pressure.

I also have some more trouble with this car. The trouble has been in the car ever since it was new. There is a funny rattle around the rear end of the engine. It sounds like a sewing machine running. This noise is almost constant. Sometimes it will disappear for a mile or so and run perfectly smooth. You can also hear it more distinctly inside of the car than you can with the hood up. I have checked the tappets very closely and had the transmission and clutch out, but could find nothing wrong. Have you any idea what this can be? The car has now gone 10,500 miles.

We suspect that your trouble is in your speedometer head if it is heard only when the car is in motion and

would suggest that you remove this part for a sufficient length of time to satisfy yourself on this point.

Model A Speed at 2200 R.P.M.

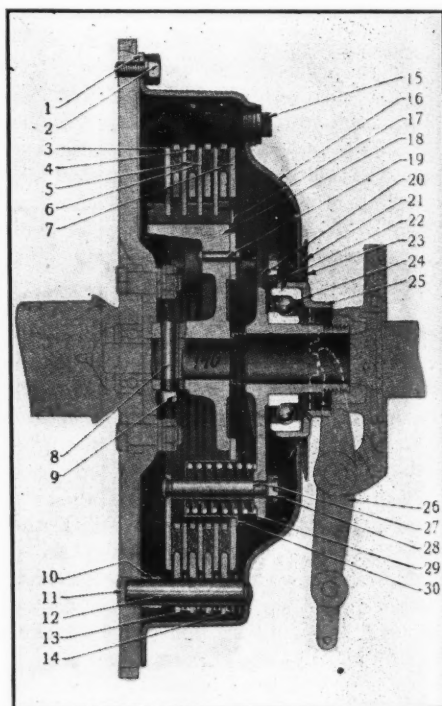
How many miles per hour will the new Ford travel at an engine speed of 2200 r.p.m., and with its regular gear ratio of 3.7 to one?—W. R. Gerlach, Shullsburg, Wis.

NEGLECTING slippage between tires and roads, the Model A Ford car will do 53 m.p.h. when the engine is turning 2200 r.p.m.

Clutch Leaks Oil

I am a reader of MOTOR AGE and would like the following information on the late 1926 or early 1927 Essex coach clutch. Please give me a diagram of the clutch used on this car. I can't keep oil in this clutch. Is there supposed to be a felt washer or something to keep the oil from coming out? —Moskop's Garage, Valmeyer, Ill.

WE are showing the clutch illustration as requested. It is most likely that your oil leakage is at No. 1, which is the clutch cover gasket. Possibly pulling down all of the clutch cover cap screws, No. 2, would eliminate this leakage. If you will refer to



parts 21 and 23 you will see that these are respectively the clutch cover oil ring and the clutch cover oil retaining ring. Damage to these rings or their omission would result in loss of oil from the clutch.

[READERS' CLEARING HOUSE]

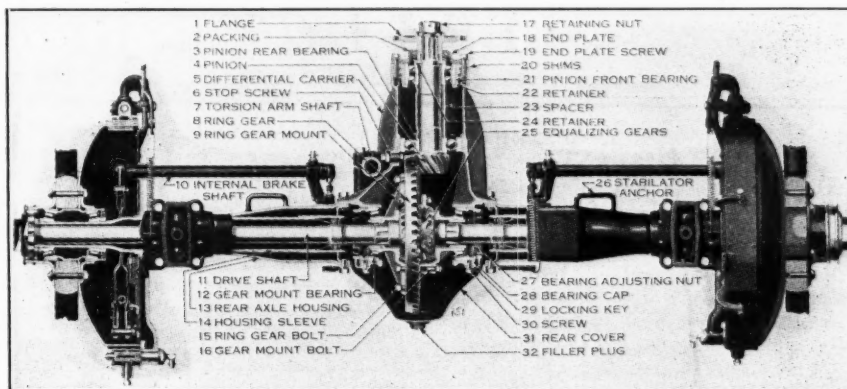
A Premier Trouble Maker

I have a 1917 Model B Premier Six that runs O. K. up to 35 m.p.h. and has perfect power without a skip. But if I try to push it faster it will lose its ignition completely before it reaches 40 and will not resume operation until its speed falls back to about 35 miles an hour. I have had this car three years and it has had its trouble ever since I have had it. Shortly after I got it I discovered this trouble and thought that it was the coil. So to be sure I took a coil off another Premier car that was working O.K., and tried it but it did not make any difference. Then I went to the breaker box and went all through it but could not find any reason for the trouble. The points were good. I corrected the adjustment. The shaft was tight, that is, it was not loose, and the cam was not worn to speak of. Still the trouble was some place. If I held the high-tension wire away from the coil terminal about 1/4 in. and opened the throttle wide open, the spark is regular until the engine speed is about one-half of its maximum. Then the spark is gone and comes back regular after the engine is slowed down a little. Then it will speed up until the spark is gone again, and so on.

As far as I can see the breaker box is perfectly all right, still it may not be. I have put in new genuine Delco points; have adjusted the points at different openings and have put in new breaker bar spring, in fact, I have tried two breaker springs. The trouble continues. The last time I made a try for it was about a year ago. At that time I took the generator off and put in an armature bushing and while I had it off I thought that I would see if the trouble was in the breaker box, coil, or where it might be. I took the gear off the distributor shaft and then connected up the coil with the breaker box and the spark plug and drove the distributor shaft to operate the points with a heavy-duty electric drill which runs 2500 r.p.m. idle. Operating the points only, I figured that the shaft was turning around the drills highest speed. In this test I noticed that as the speed increased the spark thinned out a little and at the highest drill speed the spark ceased at the plug completely. It came back, however, the instant I switched the current from the drill. I thought that this indicated the coil for the first time. As all I had in stock was a Remy replacement coil I thought I would see what that would do, so I changed coils. I noticed at once that the spark was far better and seemed to be just as good at the highest speed of the drill as when first starting. I thought that I had the trouble, so put the generator on the car and connected it up with the Remy coil and when I tried it out on the road the trouble was still there as before. If you can suggest anything, let's have it.—C. P. G., Northfield, Vt.

IN view of the fact that you have had this car for only three years, it occurs to us that the previous owner may have increased the compression unbeknown to you by removing some material from the cylinder head. The effect of this would be very much as you have described.

To check up we would suggest that you adjust your spark plugs for a uniform gap of .010 in. and set your breaker points at that opening also. Of course, this is much less than is



regularly correct, but if the car continues to fire at speeds considerably in excess of 35 m.p.h., it indicates conclusively that the compression has been increased. If you find that that is the case it would probably be worth your while to write to the manufacturer of the ignition equipment to see if you could get a distributor cap designed for high compression service. We would also suggest in that event that you install high compression or cool running aviation type spark plugs. If MOTOR AGE readers have anything further to suggest, we shall be glad to hear from them.

Horsepower Rating of Different Cars

Thanks very much for your letter in which you gave me directions for figuring engine r.p.m.'s at 40 m.p.h. I cannot find any data on b. hp. and I would appreciate this on the following 22 cars.—Robert Burns, 1313 Sheridan St., Laramie, Wyo.

EVERY issue of MOTOR AGE carries the maximum brake horsepower and the speed at which this power is delivered on those cars whose manufacturers choose to give out this information. Some do not have this information or prefer not to make it public and naturally it is impossible for us to supply the information on such cars. From your list of 22 cars we are able to give you information on all but seven. This is as follows:

Car Make and Model	B.Hp.	R.P.M.
Buick 115	63	2,800
Buick 120	77	2,800
Chevrolet	35	2,200
Dodge 128	35	2,000
Erskine	43	3,000
Ford A	40	2,200
Graham-Paige 610	52	3,100
Oakland	60	2,800
Oldsmobile	55	2,700
Reo Flying Cloud	73	2,800
Studebaker Dictator	65	2,800
Studebaker Commander	86	2,800
Chrysler 72	75	3,000
Chrysler Imperial 80	112	3,000

New Parts Needed to Stop End Play

Will you please tell me how to adjust the end play of the pinion shaft in the rear axle of the Model 314 Cadillac? Also please show a cut of this axle.—Tunncliffe, Cor. Avenue A and 23d St., Saskatoon, Sask., Canada.

THERE is no adjustment for the Model 314 for end play in the pinion shaft. If end play exists the only thing that you can do is to replace the pinion shaft bearings. We are showing a cross-sectional illustration of this axle as requested. You will notice that Arrow 20 points to shims. It is by means of these shims that the mesh of the pinion with the ring gear is controlled. But, as you will see, there is no provision for the correction of end play.

Timing an Old Knight

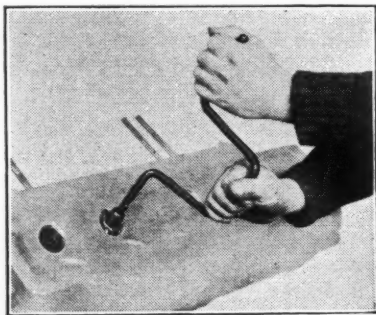
Please tell me how to check the timing of the sleeves of the Willys-Knight Model 88-4 built in 1918.—Best Garage, Decatur, Neb.

THE timing of these sleeves is checked by determining the relative position of the sleeves and the ports in the cylinder block. As the sleeves themselves are driven from a single eccentric shaft, there is no possibility of their relative positions being disturbed. To check the timing of the sleeves, remove the exhaust manifold to expose the exhaust ports in the cylinders and introduce a small electric light through the spark plug hole of cylinder No. 1. Then turn the crankshaft slowly until, with the exhaust ports closing, a narrow slit of light is barely discernible between the upper edge of the port in the outer sleeve and the lower edge of the exhaust port in the cylinder block, with the port closing. At this position the exhaust port closes and the mark $\frac{E-C}{1-4}$ on the fly-wheel should so indicate this action by registering with the guide mark on the cylinder block.

The Latest in Equipment for

Glaze Breaker

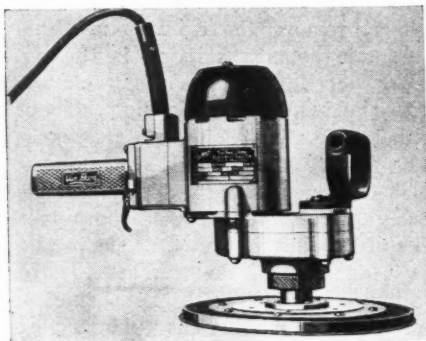
TO protect valve reseating reamers from damage from the hard glazed surface of valve seats, the Howser Valve Tool Manufacturing Co., 1911-17 Martindale Ave., Indianapolis, Ind., has brought out a unique tool. At a glance this appears much like a valve reseater. Instead of cutters, however, sections of round file are carried on the contact surface of this tool. These sections of file coming in contact with the glazed surface of the valve seat,



break up the glazing and prepare the seat for the finishing cut to be taken by the reseating reamer. The type of tool that is adjustable for different angle seats sells for \$4.25, while the regular 45 deg. stationary type sells for \$3.25. These may be used in connection with an ordinary speeder wrench, or a special speeder wrench may be purchased directly from the manufacturer of the glaze breaker, for use with it.

Flex-Disk Grinder

A NEW portable, flexible disk electric grinding machine is announced by The Van Dorn Electric Tool Company of Cleveland, O. They have de-



signed and produced this new tool to fill the need for a portable grinding and sanding machine that will surface both metal and wood. Its power, com-

pact design, coupled with the use of a flexible grinding disk enables it to handle these operations quickly and conveniently.

The motor and general construction is in all respects the same as that embodied in the "Van Dorn" electric drills. The motor has a no-load speed at 2400 r.p.m. and can be operated on either alternating or direct current. The machine is equipped with a 9 in. flexible rubber pad which serves as a base for 9 1/4 in. abrasive disk. The flex-disk feature makes possible even grinding or sanding on curved surfaces. A 6-in. flexible rubber pad is also manufactured for use with this machine. This affords an added economy as when the 9 1/4-in. abrasive disks become worn they may be cut down for use on the 6-in. flexible pad.

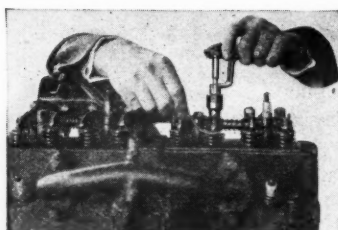
A Duco or lacquer polishing pad of heavy felt covered with a removable cloth bonnet is interchangeable with the flexible rubber pad which converts the grinder into a speedy, efficient polishing machine. Five removable cloth bonnets are supplied with each polishing pad. These bonnets, when they become soiled, may be laundered, effecting economy of maintenance.

The regular equipment furnished with the "Van Dorn" 9-in. Flex-Disk Grinder includes a 9-in. flexible rubber pad, 12 9 1/4-in. abrasive disks (3 each of No. 16, No. 24, No. 36 and No. 50 grit) and 15 ft. of cable with plug. The grinder can be furnished for use on 110, 220, 250 volt current.

Tappet Adjuster

COMBINING the use of a wrench and screw driver in one tool, this Universal Tappet Adjuster enables a mechanic to adjust quickly and accurately and lock the tappet nuts with one hand. The other hand is free to use the feeler.

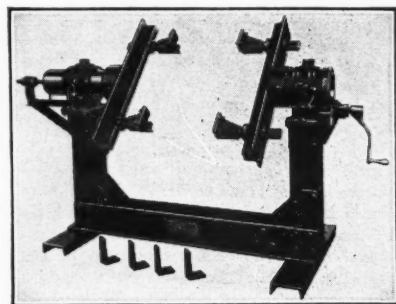
This new Universal Kent-Moore tool comes complete with three sockets—1/2 in., 9/16 in. and 5/8 in., and is manufactured by Kent-Moore Organization, Detroit and Kalamazoo.



Motor Stand

THE Kent-Moore Universal Motor Stand was designed and built to permit the complete disassembly and assembly of any size or type engine. Full accessibility to all parts of the engine is made possible by special crank and gear arrangement, turning the engine to any working position.

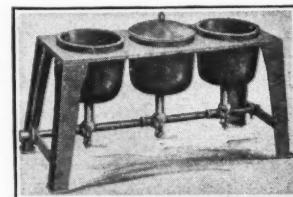
The simplicity with which one man can handle the biggest engine in this stand, and the time saved in any repair operation, are features which



make this a desirable piece of equipment in all types of repair shops, and especially in the truck and bus service station where the big engines are so hard to handle. This stand is big and so balanced that an engine can be tested while in the stand. It is manufactured by Kent-Moore Organization, Detroit and Kalamazoo.

Melting Furnace

THE illustration shows the No. 2-C Johnson Triple Melting Furnace which is designed for use in connection with a rebabbiting machine. The first pot is used with hot babbitt in which the babbitt is melted out of the old rod bearing. The rod is then placed in the middle pot and retinned. The third pot

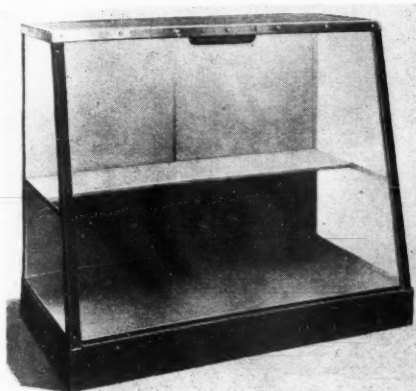


holds the new babbitt for the final pouring or casting operation. Each pot has a separate direct jet burner with shut-off valve and pilot light. This furnace is made by the Johnson Gas Appliance Co., of Cedar Rapids, Iowa. It sells for \$30.

the Automotive Service Shop

New Display Case

THE new sloping-front display case is designed to enable the dealer to present, in a very attractive manner, any merchandise which he desires to



feature. This case is made in two sizes, 4 ft. and 6 ft. long, and is finished in optional color combinations with a lighting fixture inside the case. A half shelf is so placed in this case to allow proper lighting and display, and the glass inside may be readily cleaned by removing this shelf. David Lupton's Sons Co., Allegheny Ave. and Tulip Sts., Philadelphia, are the manufacturers of this product.

Boring Bar Adjustment

EASE and precision of adjustment are among the outstanding features of the Larkin expansion boring bars, made by the Larkin Packer Co., 6200 Maple Ave., St. Louis.

These bars are made in sizes from 1 in. up and in styles that include line reaming equipment for boring crankshaft bearings, as well as for boring cylinders. The method of expanding the cutters in Larkin boring bars is simple and accurate. A wedge action



with a bearing above and below the center on angles of cutters, forces the cutter uniformly outward as the mi-

crometer screw is turned. The hardened wedge which is prevented from rotating by keyways is threaded on adjusting screw and travels forward or backward as the screw is turned. When once adjusted, cutters are securely locked in place by means of a cam movement actuated by hardened and ground eccentric locking screws.

New Upright Air Compressor

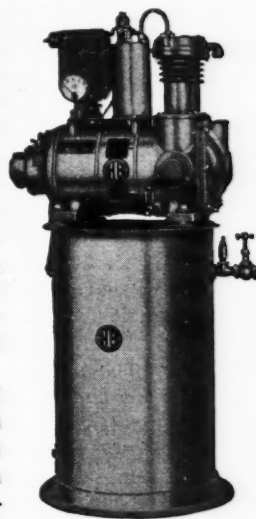
THE No. 60 HB "Airboy" is designed especially for the smaller shops and filling stations that must have air service but must hold down the amount invested in equipment.

This is powered by ½-hp. ball bearing HB motor. This outfit is mounted on the characteristically HB upright, space-saving tank.

The Twin Cylinder compressor rated at 2 cubic feet per minute displacement is directly driven by the motor by means of the HB silent, spiral, bevel transmission, running in oil. Pressure automatically maintained between 115 and 150 lbs.

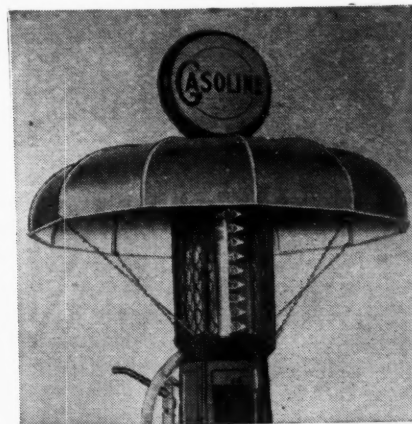
A number of improvements in design and construction are incorporated in this new "Airboy," including a new mounting of pressure gage, automatic switch and oil trap, which reduces the number of connections and minimizes the chances for leaks developing in use.

A new, one-piece, removable head and removable cylinders make all parts in this Twin Cylinder Outfit easily accessible. Storage tank is of 16 gallon capacity. Tank is of HB's own make—heavy gage steel plate, rolled and electrically welded on both sides of seam. Thoroughly tested under high pressure and made to conform with codes of all states or municipalities. The price is \$158.00. It is offered subject to 30 days trial and approval—and may be had on terms: \$26.00 with the order and 11 monthly payments of \$12.00 each. Built by The Hobart Brothers Co., Troy, Ohio.



Umbrella Canopy for Pumps

THIS umbrella pump canopy is made of galvanized steel and can be used on pumps of any type. It is 56 in. wide and 13 in. deep. It protects



the gasoline from the rays of the sun and prevents discoloration. This device is made by the Butler Mfg. Co., of Kansas City, Mo.

Barrel or Drum Tilters

PICKING up and handling oil barrels or acid carboys in service stations, is simplified by the products of the Schwenk Safety Device Co., Flushing, N. Y. These include the Schwenk carboy tilter which sells for \$7.50, or the \$12.50 carboy tilter which includes a collapsible platform and rollers which makes it easy to move from place to place. Barrel or drum safety tilter and stand makes it possible for one man to lift and place a full-sized barrel with



safety. This is substantially built and weighs 55 lb. The barrel or drum tilter equipped with wheels, sells for \$32.50.

The Latest in Automotive

New Balloon Tire

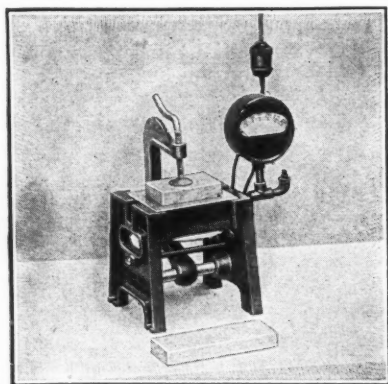
THE Miller Rubber Co. of Akron, Ohio, has developed a new type of construction for balloon tires. The tire consists of a one-piece tread and side wall with a flat-shape tread giving



approximately 38 per cent more road surface than round tire types. The tread and side wall are built as a unit, the side wall extending over the entire surface of the bead.

Tube Vulcanizer

THE Nacco No. 1 electric steam tube vulcanizer is a vulcanizer of one tube capacity. This will heat to a curing heat in three to five minutes. It has an overall length of 6 in. and a width of 4½ in. Its approximate current consumption is 150 watts per hour. This vulcanizer operates on the same principle as the larger vulcanizers in the line produced by the Nacco Mfg. Co. of St. Louis, Mo. Each vulcanizer has a boiler, the upper surface of which is used as the curing plate. These boilers are made of one-piece tubular steel with no seams and are tested to 500 lb. pressure. A safety fusible plug is in the rear of the boiler and designed to blow

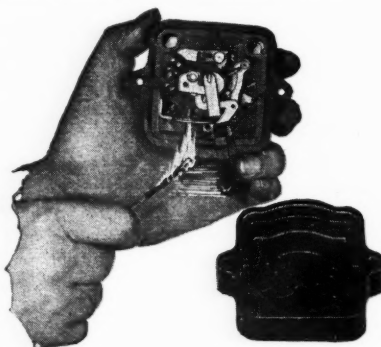


at a pressure between 85 and 100 lb. Curing pressure is only 55 to 60 lb. Immediately below the boiler is the

electric heating unit which quickly brings the water in the boiler up to curing heat. The vulcanizer described sells for \$15.

Circuit Breaker

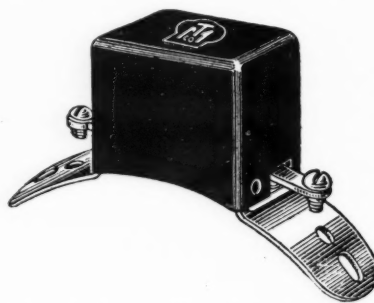
A NEW type of starting switch on electric grinders has recently been introduced on the 7-in. machines made by The United States Electrical Tool Company, Cincinnati. When the lever is thrown to the "on" position, a small dog holds the current on until overloaded or tripped by hand. The automatic overload device is very carefully calibrated, and will trip only within the limits specified by the underwriters.



This switch is also very simple. There are no springs or complicated mechanism to get out of order. It is very durable, and thoroughly insulated. The casing is made of molded Bakelite and will not crack or crumble even under severe shop usage. The lever is also of Bakelite, completely protecting the operator against shocks. Even the holding screws are concealed. This feature prevents tampering without detection.

Generator Cut-Out

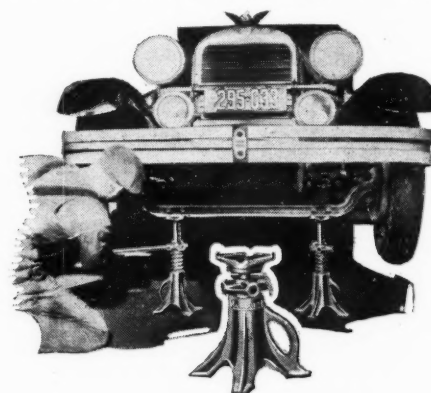
THE Type CO-3 is a new replacement generator cut-out announced for the new popular makes of cars. It is of rugged construction, with contact



points of silver with all steel parts zinc plated. It is manufactured by Tiffany Mfg. Co., of Newark, N. J., and sells for \$1.25.

Adjustable Horse

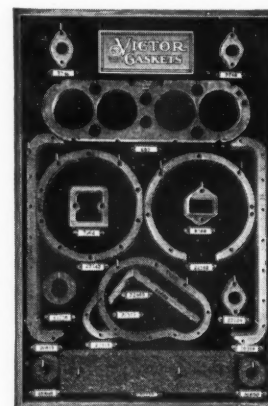
THE Marquette Auto Leg and Jack is in effect a combination of adjustable horse and shop jack. By means of the upper extension which has a range of 7½ in., the jack is very



quickly adjusted for height. The range of the screw is 6 in., and while this adjustment is a little slower than the upper one it can be varied while a car is in place on the jack. This combination gives to the service station a new convenience with absolute safety, due to the greater lifting range. The overall height of the jack in the low position is 10½ in. and in the high position 24 in. The capacity is 4 tons and the weight 21 lb. This is made by the Marquette Manufacturing Co., St. Paul, Minn., and sells for \$6.50.

Gasket Service

To facilitate the handling of gaskets in the service station and to speed up service to customers who may need these gaskets, the Victor Mfg. & Gasket Co., of 5750 Roosevelt Road, Chicago, Ill., has brought out a special



Chevrolet gasket board. As will be seen this keeps all of the Chevrolet gaskets in order and where they are

Accessories and Equipment

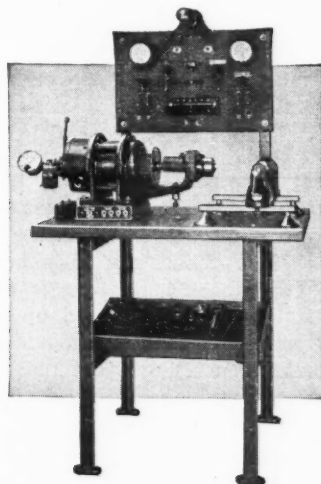
readily available. Space is saved, as this board, which measures 24 by 36 in., and contains 224 gaskets, is of the wall type.

Test Bench

ANNOUNCEMENT has just been made by Jos. Weidenhoff, Inc., makers of shop equipment for battery and electrical service, of an improved generator and ignition test bench. Also an improved "Same Day" constant potential battery charger at a new low price.

This brings this equipment within reach of thousands of shops who have realized the growing necessity for time and labor-saving facilities but who have held off because of price. The new equipment is also offered on easy time payments spread over a period of twelve months.

The new Model 25 Weidenhoff test bench enables the service station to quickly locate generator and ignition troubles before replacing the unit in the car. Being able to test a generator before installing it in the car often saves the labor of installing and taking out again, as it reveals any trouble before installing. The original Weidenhoff flexible coupling is used. The test vise supports the largest generator, including the latest bus type. All round generators are automatically centered,



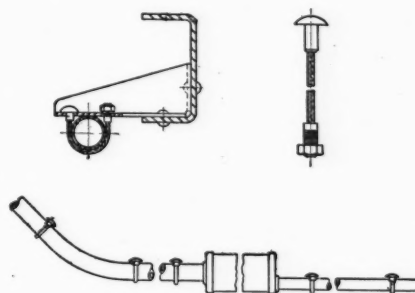
chucked, and are held in an upright position the same as they are mounted in the car. All generators are tested without removing the coil, cutout or distributor, which is especially advantageous in making a check of the complete electrical system at one time—the generator being checked by the ammeter, and the coil, cutout and distributor, being checked on the Rotary

spark gap. An elevating bracket is provided in the vise for supporting magnets, and square or irregular-shaped generators and starters. The Model 25 is mounted on a 9-ply veneer top 40 by 26 by 2 in. It will never warp or crack. Between the steel legs is a metal tray for tools and parts.

The same outfit mounted on a heavy steel base—without legs—called the Model 18—sets on any workbench and costs less. Prices on these two new Weidenhoff test benches will be quoted upon application to Joseph Weidenhoff, Inc., 4358 Roosevelt Rd., Chicago, Ill.

Flexible Bolts

AN unusual development is that of flexible bolts. These are being made by the American Cable Co. of New York and are called the Tru-Lay—Tru-Loc bolt. These bolts are made of the preformed Tru-Lay type of rope equipped with Tru-Loc fittings. They



are applicable to many parts of the chassis where rigid bolts are impractical, such as for securing the exhaust pipe or similar parts. These bolts are available in varying lengths according to requirements. It will be recalled that this Tru-Lay wire rope with the Tru-Loc fitting is quite widely used as connections for brakes.

Boring-Reaming Tool

THE Watervliet spiral expansion aligning reamer is really a combined reaming and boring tool. At one end of this tool is a special cutter for breaking through the hard and glazed surface of the old bushing. As a consequence the reamer does the finishing only. The result is longer life for the cutting edges. This reamer is made of special tungsten steel, properly machined and heat-treated, assuring a uniform and permanent cutting edge. Each of these reamers is equipped with a positive lock which protects it from

over-expansion with its resultant distortion or possible breakage. The expansion of these reamers ranges from .012 in. oversize for the smaller reamers to .017 in. oversize on the larger reamers. These are made by the Watervliet Tool Co., Inc., Albany, N. Y.

Fuel Pump

A NEW electric fuel pump has been designed which may be installed on any part of an automobile either above or below the level of the carburetor. In this pump a gasoline filter is made integral with the pumping unit. The pump terminal is connected with the battery side of the coil or the ignition switch, so that its action is automatic with the ignition and when coasting with the ignition turned off no



fuel can reach the carburetor. The fuel enters the pump on the left side and passes through the glass bowl containing the screen before passing on to the carburetor. It is claimed that this filter will operate under all conditions of temperature, altitude or grade. It will function when the battery is too weak to operate the ignition, is not affected by vibration and will deliver over 15 gal. of fuel per hour. This pump is known as the "V-R" Electric Fuel Pump and is made by the V-R Fuel Pump Corp., Detroit, Mich.



Such Appreciation Must Be Deserved

PEORIA, ILL.—Please advise whether or not you can furnish us from 50 to 400 copies of page 46 of MOTOR AGE of March 8. We would like very much to have Mr. C. Edward Packer's reply to Mr. C. D. Kauffman's letter on "What is Pennsylvania Oil?"—H. C. Griffin, Standard Oil Co. (Indiana).

A Fragrant Nosegay for Our President

INDIANAPOLIS—"Who Will Make Money in 1928" in your Feb. 16 issue is very interesting and presents ideas which would be of unlimited benefit to everybody if practised. Editorial matter of this sort is certainly



constructive and should be of substantial benefit.—Oscar X. Buehler, Indianapolis Tool & Mfg. Co.

Here's From the Ladies—God Bless 'Em

MARSHALLTOWN, IOWA—We are grateful indeed for the splendid story written about us by Mr. Hook. It is by far the best news article we have ever received. Many thanks to you.—Neil & Stockwell Motor Co.

The Same to You

PERTH, N. D.—This makes about 10 years of MOTOR AGE for me, so you can see how I enjoy it. It has certainly helped me solve a few hard problems. I wish you continued success.—Leo Miller.

LETTERS to the editor from those whose "attention has been called"; from those who point with pride and those who view with alarm, from those who are easy to please and those who are hard to please; from those who are happy when they find a good thing and those who are happier when they find something they consider not so good; from those who boost and those who knock; from those who see the doughnut and those who see the hole; in other words, Dear Subscriber, from you and you and you—as well as from the man who borrows your copy of MOTOR AGE or reads it over your shoulder.

We're Good, if Good Says We're Good

HARTNER, KAN.—I like MOTOR AGE very much and can recommend it to anyone engaged in the lines for which it is intended to help.—Edgar Good.

A Lovely Message of Love from Loveland

LOVELAND, COL.—We have been without the MOTOR AGE for the past two weeks and we sure miss it. Kindly get our address changed so we will get the next number.—G. A. Fox.

We're Thanked for Making Ourselves What We Are

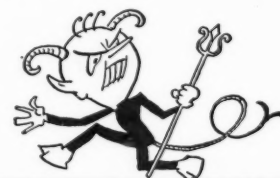
OKMULGEE, OKLA.—MOTOR AGE could not be better and we await its arrival with pleasure. I thank you for your praiseworthy efforts in making MOTOR AGE as helpful and instructive as it is.—R. A. Schmidt.

There's No Reason Why Anyone Should

CHANUTE, KAN.—It is pretty hard to get along without MOTOR AGE.—M. R. Wilson.

What if It's a Mountain to Begin With?

PHILADELPHIA, PA.—I am just a bit skeptical about the super-excellent salesmanship of the "new competition" elements to which MOTOR AGE has given some attention in the last few issues. Reading the articles on this subject that have appeared one is given the impression that radio, piano, refrigerator, furniture and carpet sweeper salesmen sell by go-getting methods every radio, piano, etc., that is purchased by the great American public, and, in general, keep themselves busier than the proverbial cat practising personal hygiene on a tin roof. This strikes me odd, as I happen to have a dozen close friends who recently purchased all of the items enumerated



and had to do the go-getting themselves. It happens, also, that I'm in the same boat. Which causes me to wonder if the "new competition" thing is as all-fired serious as it is cooked up to be. Don't you think that if a mountain is made of a molehill it's just that much harder to cross?—P. H. Egolf.

Pack's Chronicles Cure Chronic Ills

SASKATOON, CANADA—The writer has on two of three occasions cured chronic troubles due to your splendid information by Mr. Packer.—Geo. Tunnecliffe.

Cuddle Up a Little Bit Closer

ASHEVILLE, N. C.—MOTOR AGE seems to still be growing better and better. Hurrah for 1948!—R. H.

Prices, Weights and Equipment of Current Passenger Car Models

Important Changes in Specifications and Price Tables since last issue:

A New Roadster on Moon 8-80 Chassis

Passengers and Model					F.O.B. Price	Doors	Shipping Weight	Standard Equipment
CADILLAC "341"								
"Fisher"								
2-4p. Roadster.....	\$3350	2	4590	aeghlmpnx				
5p. Phaeton.....	3450	4	4640	aeghlmpnx				
5p. Sp. Phaeton.....	3950	4	5125	Beghiklmpr				
7p. Touring.....								
2-4p. Coupe.....	3295	2	4820	aeghlmpnx				
2-4p. Conv. Coupe.....	3495	2	4665	aeghlmpnx				
5p. Coupe.....	3495	2	4760	aeghlmpnx				
5p. Sedan.....	3595	4	4880	aeghlmpnx				
5p. Town Sedan.....	3395	4	4875	aeghlmpnx				
7p. Sedan.....	3895	4	4965	aeghlmpnx				
5p. Imp. Sedan.....	3745	4	4925	aeghlmpnx				
7p. Imp. Sedan.....	3895	4	5025	aeghlmpnx				
5p. Imperial Cab.....	3745	4	4925	aeghlmpnx				
7p. Imperial Cab.....	3895	4	5025	aeghlmpnx				
"Fleetwood"								
5p. Sedan.....	4095	4	4995	aeghlmpnx				
5p. Sedan Cab.....	4095	4	4995	aeghlmpnx				
7p. Sedan.....	4195	4	5080	aeghlmpnx				
7p. Sedan Cab.....	4195	4	5080	aeghlmpnx				
5p. Imperial.....	4245	4	5035	aeghlmpnx				
5p. Imperial Cab.....	4245	4	5035	aeghlmpnx				
7p. Imperial.....	4445	4	5135	aeghlmpnx				
7p. Imperial Cab.....	4445	4	5135	aeghlmpnx				
...Town Cab Con.....	5000	4	...	aeghlmpnx				
...Town Cab Con.....	5500	4	...	aeghlmpnx				
...Lim Bro'm Con.....	5500	4	...	aeghlmpnx				
CHANDLER								
"Big Six"								
7p. Touring.....	\$1725	4	3360	ahjlmnw				
5p. Met. Sedan.....	1525	4	3570	ahmmt				
4p. Coupe.....	1725	2	...	ahmmt				
3p. Ctry. Club.....	1725	2	3535	ahmmt				
7p. Sedan.....	1925	4	3895	ahmnopt				
5p. Royal Sedan.....	1725	4	3800	ahmnoptx				
3-5p. Cabriolet.....	1825	2	3450	ahmnp				
"Spec. 6"								
5p. Touring.....	995	4	2575	ahn				
5p. Sedan.....	995	4	2810	ahn				
"Spec. In. 6"								
5p. Touring.....	1085	4	2575	ahn				
3-5p. Roadster.....	1155	2	2470	ahnw				
5p. Sp. Touring.....	1165	4	2730	ahnw				
3-5p. Cabriolet.....	1215	2	2705	ahn				
3p. Coupe.....	1055	2	2675	ahn				
5p. Sedan.....	1085	4	2830	ahn				
5p. DeL. Sedan.....	1155	4	2830	ahjnt				
3-5p. Coupe.....	1155	2	2735	ahn				
"Roy. St. 8"								
7p. Touring.....	1995	4	3655	ahjlmnpwx				
4p. Coupe.....	1995	2	3640	ahmnoptx				
4p. Ctry. Club.....	1995	2	3640	ahmnoptx				
5p. Sedan.....	1995	4	3900	ahmnoptx				
7p. Sedan.....	2195	4	3950	ahmnoptx				
3-5p. Cabriolet.....	2095	2	3600	ahmnp				
5p. DeL. Sedan.....	2195	4	4005	Bhilmnoptx				
CHEVROLET								
2p. Roadster.....	\$495	2	2030	dr				
5p. Touring.....	495	4	2090	dr				
5p. Coach.....	585	2	2360	dhr				
2p. Coupe.....	595	...	2235	...				
5p. Sedan.....	675	4	...	dhr				
2-4p. Cabriolet.....	665	2	2270	dhr				
5p. Imp. Land.....	715	4	2405	dhr				
CHRYSLER "52"								
5p. Touring.....	\$695	4	2110	ahr				
2-4p. Roadster.....	670	2	2080	ahr				
2p. Club Coupe.....	670	2	2180	ahr				
5p. Sedan.....	670	2	2300	ahr				
5p. Sedan.....	720	4	2365	ahr				
2-4p. DeL. Coupe.....	720	2	2240	ahr				
5p. DeL. Sedan.....	790	4	2365	ahr				
"62"								
5p. Touring.....	1095	4	2740	aghr				
2-4p. Roadster.....	1075	2	2705	aeghrw				
2p. Bus Coupe.....	1065	2	2780	aghr				
5p. Sedan.....	1095	2	2855	aghr				
5p. Sedan.....	1175	4	2905	aghr				
2-4p. Coupe.....	1145	2	2855	aghr				
5p. Land. Sedan.....	1235	4	2940	aghr				
"72"								
2-4p. Roadster.....	\$1495	2	3005	aeghlmpnx				
2-4p. Sp. Rdstr.....	1595	2	3005	aeghlmpnx				
4p. Coupe.....	1595	2	3155	aghlmpnx				
2-4p. Coupe.....	1545	2	3140	aghlmpnx				
5p. Roy. Sedan.....	1595	4	3275	aghlmpnx				
5p. Town Sedan.....	1695	4	3280	aghlmpnx				
2-4p. Con't Coupe.....	1745	2	3135	aghlmpnx				
5p. Crown Sedan.....	1795	4	3270	aghlmpnx				
7p. Town Cab.....	3595	4	3485	...				
Imp. "80"								
2-4p. Roadster.....	2795	3	3870	aeghlmpnx				
5p. Sedan.....	2945	4	4125	aeghlmpnx				
7p. Sedan.....	3057	4	4250	aeghlmpnx				
5p. Town Sedan.....	2995	4	4140	aeghlmpnx				
7p. Sedan Lim.....	3495	4	4285	aeghlmpnx				
CUNNINGHAM								
"V-7"								
7p. Touring.....	\$6650	4	4600	Ceghiklmnp				
4p. Sp. Touring.....								
4p. Sp. Touring.....	6150	4	4500	Ceghiklmnp				
4p. Coupe.....	7600	2	4700	Ceghiklmnp				
6p. Limousine.....	8100	4	5000	Ceghiklmnp				
DAVIS "99"								
4p. Polo Rdster.....	\$1885	2	3095	aeghlmpnx				
5p. Touring.....	1885	4	3125	aeghlmpnx				
4p. Coupe.....	1885	2	3145	aeghlmpnx				
5p. Emp. Sedan.....	1885	4	3275	aeghlmpnx				
DIANA "St. 8"								
5p. Phaeton.....	\$1695	4	3100	agmn				
5p. Roy. Roadster.....	1795	2	2995	agmnw				
5p. P.B. Rdster.....	1895	2	2995	Bgmw				
5p. Cab. Rdster.....	1995	2	3160	agmn				
5p. Collap. Rdster.....	2195	2	3160	aghlmpnx				
5p. 4d. Sedan.....	2095	4	3275	aghlmpnx				
5p. 2d. Sedan.....	1795	2	3170	aghlmpnx				
DODGE BROS.								
"Std. 6"								
2-4p. Conv't Cab.....	\$945	...	...	bhr		
2p. Coupe.....	875	2	...	ahr				
5p. Sedan.....	895	4	...	ahr				
5p. Sedan DeL.....	970	4	...	aeghr				
"Victory 6"								
2p. Coupe.....	1045	2	...	aghr				
2-4p. Coupe.....	1095	2	...	aghr				
5p. Sedan.....	1095	4	...	aghr				
4p. Brougham.....	1095	2	...	Bghjnr				
4p. DeL. Bro'm.....	1170	2	...	Beghjnr				
5p. DeL. Sedan.....	1170	4	...	aeghnr				
"Senior"								
4p. Cab. Rdster.....	1595	2	3353	Beghlmpnx				
5p. Sedan.....	1495	...	3409	aeghr				
5p. Sedan.....	1595	4	3421	aeghlmpnx				
4p. Coupe.....	1570	2	3315	aeghlmpnx				
du PONT "E"								
4p. Roadster.....	\$2800	...	3700	afghkmpnx				
5p. Touring.....	2800	4	3850	afghkmpnx				
4p. Coupe.....	3200	...	3850	afghkmpnx				
4p. Conv't Coupe.....	3400	2	2800	afghkmpnx				
5p. Sedan.....	3400	4	4100	afghkmpnx				
5p. Con. Sedan.....	3750	4	4100	Bfghikmpnx				
"F"								
...Phaeton.....	\$3950	...	...	...	
...Phaeton.....	4500	...	...	...	
...Sedan.....	4050	...	...	...	
5p. Limousine.....	4265	...	...	...	
7p. Sedan.....	4265	...	...	...	
7p. Limousine.....	4475	...	...	...	
...Conv't Sedan.....	4775	...	...	...	
DURANT								
"55"								
...Coupe.....	\$795	...	2235	ah				
5p. Sedan.....	795	2	2395	ah				
5p. Brougham.....	895	4	2425	ah				
"65"								
5p. Touring.....	795	4	2217	aghlmpnx				
2-4p. Sp. Rdster.....	1025	2	2300	Beghikmn				
2-4p. Collap. Cab.....	1045	2	2420	aghlmpnx				
2-4p. Coupe.....	975	2	2305	aghlmpnx				
5p. Sedan.....	975	2	2425	aghlmpnx				
5p. Sedan.....	1075	4	2565	aghlmpnx				
5p. Brougham.....	1175	4	2495	Beghikmn				
"75"								
5p. Sedan.....	1385	4	2990	aghlmpnx				
5p. Brougham.....	1550	4	3190	Beghikmn				
ELCAR								
"6-70"								
4p. Roadster.....	\$1295	2	2580	ahnr				
5-7p. Touring.....	1295	...	...	ahnr		
4p. Brougham.....	1295	2	2670	ahnr				
5p. Sedan.....	1295	4	2750	ahnr				
"8-78" Std.								
2-4p. Roadster.....	1395	2	...	ahnr				
5p. Touring.....	1395	...	...	ahnr		
2-4p. Coupe.....	1395	2	...	ahnr				
5p. Sedan.....	1395	4	...	ahnr				
"8-78 Royal"								
4p. Roadster.....	1495	...	...	aeghlmpnx		
5p. Touring.....	1495	...	...	aeghlmpnx		
4p. Coupe.....	1495	...	...	aeghlmpnx		
5p. Sedan.....	1495	...	...	aeghlmpnx		
"8-82"								
5-7p. Touring.....	1695	...	...	aeghlmpnx		
2-4p. Roadster.....	1695	2	...	aeghlmpnx				
4p. Coupe.....	1695	2	...	aeghlmpnx				
5p. Prin. Sedan.....	1895	4	...	aeghlmpnx				
"8-91"								
2-4p. Roadster.....	1995	...	...	aeghlmpnx		
4p. Coupe.....	2295	...	...	aeghlmpnx		
5p. Prin. Bro'm.....	2295	4	...	aeghlmpnx				
5p. Prin. Sedan.....	2295	4	...	aeghlmpnx				
"120"								
5-7p. Touring.....	2465	4	...	aghlmpnx				
5p. Std. Sedan.....	2465	4	...	aeghlmpnx				
7p. Std. Sedan.....	2565	4	...	aeghlmpnx				
ERSKINE SIX								
"51"								
4p. Spt. Rdstr.....	\$965	2	...	Beghlmpnx				
5p. Club Sedan.....	795	2	2480	aghr				
5p. Sedan.....	885	4	2545	aghr				
2p. Bus. Coupe.....	895	2	...	aeghr				
4p. Spt. Coupe.....	965	2	...	aeghr				
5p. Sedan, Royal.....	965	4	2545	aeghr				
ESSEX								
"Super Six"								
2-4p. Coupe.....	\$775	2	2535	ahmnr				
5p. Coach.....	735	2	2560	ahmnr				
5p. Sedan.....	795	4	2660	ahmnr				
FALCON-KNIGHT								
"12"								
4p. Roadster.....	...	...	2450	ghr		
...Touring.....	...	...	...	...
4p. G.G. Rdster.....	...	...	2500	Beghlmpnx		
2-4p. Coupe.....	1145	...	2565	ghr				
5p. Sedan.....	1095	2	2900	ghr				
5p. Sedan.....	1195	4	2875	ghor				
5p. Landau.....	...	...	2735	ghrtu		

KEY TO SYMBOLS:

A—Wood wheels with spare.
a—Wood wheels.
B—Wire wheels with spare.
b—Wire wheels.
C—Optional wheels with spare.
c—Type of wheels optional.

D—Disk wheels with spare.
d—Disk wheels.
e—Front and rear bumpers.
f—Front bumper.
g—Shock absorbers or snubbers.
h—Automatic windshield wiper.

I—Trunk and trunk rack.
j—Trunk rack, no trunk.
k—Spare tire.
l—Spare tire lock.
m—Engine heat indicator.
n—Dash gasoline gage.

o—Car heater.
p—Cigar lighter.
r—Rear traffic signal.
s—Spotlight.
t—Vanity and smoking set.
u—Smoking set.

v—Vanity set
w—Windshield wings
x—Clock.
y—Overall length.
z—Prices on application.

Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment
FORD "A"					HUPMOBILE					LA SALLE					McFARLAN				
125" W.B.					125" W.B.					125" W.B.					131" W.B.				
2-4p. Roadster....	\$ 385	2	....	Bghnr	5p. Phaeton.....	\$1425	2	2900	aghr	2-4p. Roadster....	\$2485	2	3755	aeghlmnprx	2p. Roadster.....	\$3050	2	3400	afghlmprx
5p. Phaeton.....	395	4	....	Bghnr	4p. Sportster....	1435	2	....	aghr	5p. Phaeton.....	2485	4	3770	aeghlmnprx	5p. Touring.....	2650	4	3400	afghlmprx
2p. Coupe.....	495	2	....	Bghnr	7p. Phaeton.....	1455	4	2940	aghr	5p. Sp. Phaeton..	2975	4	4170	Beghikmnp rsx	7p. Touring.....	2750	4	3450	afghlmprx
5p. Tudor Sedan..	495	2	....	Bghnr	5p. Sedan 2d....	1345	2	2975	aghr	2p. Bus. Coupe....	2350	....	3930	aeghlmnprtx	4p. Sp. Phaeton..	3180	2	3200	afghlmprx
2-4p. Spt. Coupe..	550	2	....	Bghnr	4p. Coupe.....	1385	2	2965	aghr	5p. Family Sedan..	2350	....	4090	aeghlmnprtx	3p. Town Coupe..	3180	2	3650	afghlmprx
5p. Fordor Sedan..	570	4	....	Bghnr	5p. Sedan.....	1395	4	3040	aghr	2-4p. Coupe.....	2450	2	3965	aeghlmnprx	5p. Sedan.....	3180	4	3650	afghlmprx
					2p. Cabriolet....	1475	....	....	aghr	2-4p. Conv. Cpe....	2550	2	3890	aeghlmnprx	5p. Brougham....	3180	4	3650	afghlmprx
					"Century 125-8"					4p. Victoria.....	2550	2	3985	aeghlmnprtx	7p. Town Car.....	4600	4	3750	afghlmprx
					5p. Touring.....	1795	4	3300	eghnrx	5p. Town Sedan....	2495	4	4065	aeghlmnprx	7p. Sedan.....	3680	4	4000	afghlmprx
					7p. Touring.....	1895	4	3360	beghnrvx	5p. Sedan.....	2495	4	4090	aeghlmnprtx	7p. Sub. Sedan....	3780	4	4000	afghlmprx
					2-4p. Roadster..	1895	2	3355	eghnrvx	5p. Town Cab.....	4500	4	....	....			
					5p. Brougham....	2095	2	3515	j	5p. Trans. Cab....	4700	4	....	....			
					2-4p. Coupe.....	2195	2	3565	dghrx										
					5p. Sedan.....	2195	4	3545	aghrx										
					5p. Victoria.....	2195	2	3525	aeghnrx										
					7p. Sedan.....	2345	4	3360	ehr										
					7p. Sedan Lim....	2520	4	3360	aeghnrx										
					"Century 8"														
					5p. Phaeton.....	1905	....	....	....							
					2-4p. Sportster..	1915	....	....	....							
					7p. Phaeton.....	1935	....	....	....							
					5p. Sedan.....	1825	2	3385	....									
					4p. Coupe.....	1865	....	....	....							
					5p. Sedan.....	1875	4	3455	....									
					2-4p. Cabriolet..	1955	....	....	....							
	</																		

KEY TO SYMBOLS:

- | | | | | |
|-------------------------------|--------------------------------|--------------------------|---------------------------|---------------------------|
| A—Wood wheels with spare. | D—Disk wheels with spare. | i—Trunk and trunk rack. | o—Car heater. | v—Vanity set. |
| a—Wood wheels. | d—Disk wheels. | j—Trunk rack, no trunk. | p—Cigar lighter. | w—Windshield wings |
| B—Wire wheels with spare. | e—Front and rear bumpers. | k—Spare tire. | r—Rear traffic signal. | x—Clock. |
| b—Wire wheels. | f—Front bumper. | l—Spare tire lock. | s—Spotlight. | y—Overall length. |
| C—Optional wheels with spare. | g—Shock absorbers or snubbers. | m—Engine heat indicator. | t—Vanity and smoking set. | z—Prices on applications. |
| c—Type of wheels optional. | h—Automatic windshield wiper. | n—Dash gasoline gauge. | u—Smoking set. | |

Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	
"Special"					PEERLESS					ROAMER					"Commander"					
4p. Roadster.....	1225	2	2980	Dghnr	2-4p. Roadster.....	\$1195	2	2600	deghlmnr	2p. Roadster.....	\$1595	2	3450		4p. Sp. Roadster.....	1695	2	3333	aeghmnr	
5p. Touring.....	1135	4	2680	Dghnr	5p. Phaeton.....	1195	4	2765	aghlmmrw	2p. Coupe.....	1750	2	3225		3p. Bus. Coupe.....	1495	2	...	aghmnr	
2-4p. Cabriolet....	1290	4	3070	Dghnr	2-4p. C'pe Rdstr..	1295	4	2725	deghlmnr	5p. Sedan.....	1795	2	3380		4p. Victoria.....	1495	2	3500	aghmnr	
2p. Bus. Coupe....	1165	2	3030	Dghnr	5p. Sedan.....	1295	4	2895	deghlmnr	"8-80"				5p. Sedan.....	1495	4	3566	aghmnr		
5p. Sedan.....	1215	2	3150	Dghnrt	"6-80"					2p. Coupe.....	1985	2	3410	ag	4p. Cpe. Regal.....	1625	2	3455	aeghmnr	
5p. Coupe.....	1245	2	3030	Dghnr	5p. Phaeton.....	1395	4	2850	aeghlmmrw	5p. Brougham....	1985	2	3440	ag	4p. Vic. Regal.....	1625	2	3500	aeghmnr	
4p. Victoria.....	1295	2	3170	Dghnr	2-4p. Roadster....	1495	2	3025	ceghlmnrw	5p. Sedan.....	1985	4	3570	ag	5p. Sed. Regal.....	1625	4	3566	aeghmnr	
5p. Sedan.....	1265	4	3250	Dghnrt	2-4p. Coupe.....	1565	2	2975	aeghlmmr	"8-88"				5p. Sedan.....	1985	4	4000	aeghlmmpr		
5p. Coupe.....	1445	4	3380	Dghnrt	5p. 2d. Sedan.....	1395	2	3000	aeghlmmr	5p. Tourer.....	2495	4	3650	cg	7p. Sedan.....	1985	4	4040	aeghlmmpr	
"Advanced"					5p. Std. Sedan....	1395	4	3125	aghlmmr	7p. Sedan.....	2385	4	3980	cg	5p. DeL. Sedan....	2250	4	4185	Beghikmnr	
121" W.B.					... Spt. Sedan....	1395	4	3100		"Si. Hawk"				7p. DeL. Sedan....	2250	4	4225	Beghikmnr		
4p. Roadster.....	1475	2	3400	Dghmnr	5p. DeL. Sedan....	1795	4	3125	Deghlmmr	Open Models....	\$	...	Bfghikmnp	7p. Limousine....	2450	4	4300	Beghikmnr	
5p. Touring.....	1340	4	3400	Dghmnr	"6-91"					Closed Models....	\$	...	Bfghikmnp						
5p. Sedan.....	1425	2	3620	Dghmnr	5p. Phaeton.....	1695	4	2930	aeghlmmrw	ROLLS ROYCE				STUTZ "BB"						
5p. Sedan.....	1495	4	3650	Dghmnr	2-4p. Sp. Roadster	1695	2	2960	aeghlmmrw	"Si. Ghost"				"Custom"						
127" W.B.					4p. Coupe.....	1725	2	3050	aeghlmmr	Open Models....	\$	...	Bfghikmnp	131" W.B.					
7p. Touring.....	1440	4	3500	Dghmnr	4p. Sedan.....	1895	2	3150	aeghlmmr	Closed Models....	\$	...	Beghikmnp	2p. Speedster....	\$3495	2	4478	aefghlmnp	
5p. Sp. Touring...	1540	4	3500	Bghimnpr	5p. Sedan.....	1895	4	3200	aeghlmmr	"New Phan"				4p. Speedster....	3595	4	4509	aeghlmmpr		
4p. Victoria.....	1595	2	3640	Dghmnr	5p. Landulet....	1995	4	3250	aeghlmmr	Open Models....	\$	...	Beghikmnp	4p. Speedster....	3845	4	4600	aeghlmmpr	
4p. Coupe.....	1775	2	3650	Dghmnr	128" W.B.					Closed Models....	\$	...	Beghikmnp	2p. Black Hawk...	4895	2	...	beghlmmpr	
5p. Amb. Sedan...	1925	4	3820	Dghnprtx	7p. Sedan.....	1985	4	...	B	"Star 4"				4p. Black Hawk...	4945	2	...	beghlmmpr		
7p. Sedan.....	1990	4	3830	Dghnprtx	"8-69"					... Roadster....	\$495	...	1955	ah	2p. Coupe.....	3495	2	4649	aeghlmmpr	
7p. Imp. Sedan...	2165	4	3900	Dghnprtx	5p. Coupe.....	2705	...	3810	Deghlmmr	... Coupe....	495	...	2185	ah	4p. Vic. Coupe...	3495	2	4679	aeghlmmpr	
					5p. Sedan.....	2345	4	3875	Deghlmmr	5p. Brougham....	495	2	2260	ah	5p. Sedan....	3570	4	4977	aeghlmmpr	
					133 1/2" W.B.					5p. Sedan....	570	4	2335	ah	2p. Cab. Coupe...	3665	2	4520	aeghlmmpr	
					2-4p. Roadster...	2245	2	3650	Deghlmmr	STEARNS-				145" W.B.						
					7p. Sedan.....	2545	...	3975	Deghlmmr	KNIGHT				7p. Speedster....	3895	4	4748	aeghlmmpr		
					7p. Cus. Sed. Lim	2645	4	4275	Deghlmmr	"F-6-85"				7p. Sedan....	3895	4	5018	aeghlmmpr		
					5p. Sedan....	2345	4	3950	Deghlmmr	4p. Roadster....	\$3250	2	4252	aeghlmmr	7p. Sedan Lim...	3995	4	5159	aeghlmmpr	
					7p. Sedan....	2545	4	4050	Deghlmmr	4p. Touring....	3250	4	4322	aeghlmmr	"Weyman Cus."					
					5p. Ber. Lim....	2345	4	4100	Deghlmmr	4p. Cab. Rdstr..	3550	2	4500	aeghlmmpr	131" W.B.					
										5p. Cus. Sedan...	3350	4	4562	aeghlmmr	2p. Black Hawk...	4895	2	...	beghlmmpr	
										4p. Coupe.....	3450	2	4527	aeghlmmr	5p. Sedan....	4120	4	4393	aeghlmmpr	
										5p. Std. Sedan...	3450	4	4572	aeghlmmr	4p. Sedan....	4120	2	...	aeghlmmpr	
										5p. Sedan Lim...	3700	4	4647	aeghlmmr	4p. Coupe....	4120	2	...	aeghlmmpr	
										5p. Cus. Sed. Lim	3700	4	4637	aeghlmmr	5p. Landau Sed...	4420	4	...	aeghlmmpr	
										7p. Sedan....	3750	4	4702	aeghlmmr	145" W.B.					
										7p. Sedan Lim...	3950	4	4777	aeghlmmr	5p. Sedan....	4495	4	...	aeghlmmpr	
										"H"				5p. Sedan....	4545	4	...	aeghlmmpr		
										4p. Roadster....	2	...	afghmmprw	7p. Sedan....	4745	4	...	aeghlmmpr		
										4p. Cabriolet....	2	...	afghmmpr	7p. Limousine...	4995	4	4778	aeghlmmpr		
										2p. Coupe....	2	...	afghmmpr	7p. Landau Lim...	5295	4	...	aeghlmmpr		
										5p. Coupe....	5500	2	4942	aeghlmmpr	"Salon Cus."					
										5p. Sedan....	4	5100	aeghlmmpr	5p. PW Sedan...	6345	4	...	aeghlmmpr		
										7p. Touring....	5600	4	4872	afghmmprw	7p. PW Sedan...	6345	4	4974	aeghlmmpr	
										7p. Sedan....	5600	4	5167	afghmmpr	7p. Con. T'n Car	6895	4	...	aeghlmmpr	
										7p. Limousine...	5800	4	5217	afghmmpr						
										7p. Town Cab...	4	...	afghmmpr	VELIE						
										7p. Town Bro'm...	4	...	afghmmpr	"Std. 50"						
										"G8-85"				5p. Touring....	\$995	2	2670	aeghmnr		
										4p. Roadster....	3950	2	4448	aeghlmmpr	5p. Sedan....	1115	2	...	aeghmnr	
										4p. Touring....	3950	4	4633	aeghlmmpr	5p. Coupe....	1165	2	2917	aeghmnr	
										4p. Cabriolet...	4550	2	4717	aeghlmmpr	5p. Sedan....	1165	4	3017	aeghmnr	
										4p. Coupe....	4550	2	4882	aeghlmmpr	"6-66"					
										5p. Sedan....	4650	4	4934	aeghlmmr	5p. Metro Sed...	1195	2	...	aeghmnr	
										7p. Sedan....	4750	4	5027	aeghlmmr	5p. Metro Sed...	1265	4	...	aeghmnr	
										5p. Sedan Lim...	4850	4	5009	aeghlmmr	2-4p. Metro Cpe.	1265	2	...	aeghmnr	
										7p. Limousine...	4950	4	5102	aeghlmmr	"6-77"					
										STUDEBAKER				5p. Spec. Sedan...	1585	4	3365	aeghmnr		
										"Dictator"				5p. Royal Sedan...	1635	4	3395	aeghmnr		
										5p. Tourer Royal	\$1195	4	3000	aeghmnr	"8-88"					
										5p. Du Phaeton...	1195	4	3040	aeghmnr	5p. Royal Sedan...	2095	4	3640	aeghmnr	
										4p. Sp. Roadster...	1245	2	3000	aeghmnr						
										7p. Tourer Royal...	1295	4	3020	aeghmnr						
										3p. Bus. Coupe...	1195	2	3100	aeghmnr						
										4p. Coupe Royal...	1295	2	3134	aeghmnr						
										4p. Victoria Royal	1295	2	3184	aeghmnr						
										5p. Sedan....	1195	4	3241	aeghmnr						
										5p. Sedan Royal...	1295	4	3241	aeghmnr						

KEY TO SYMBOLS:

A—Wood wheels with spare
B—Wire wheels with spare
C—Optional wheels with spare
D—Type of wheels optional.

D—Disk wheels with spare
d—

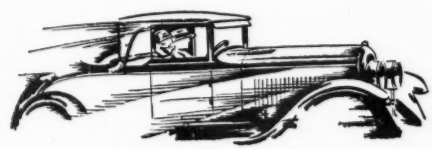
Mechanical Specifications of Current Passenger Car Models

This list comprises current cars distributed on a national basis only. Data for previous models back to 1920 will be found in the Chilton Catalog and Directory

MAKE AND MODEL	Wheel Base (Inches)	Tire Size	Make and Model	Number of Cyls.	Rated H.P.	Position Displacement	Valve Arrangement	Maximum Brake Horsepower at Specified Speed	Compression Ratio	Camshaft Drive	Piston Material	No. Main Bear.	Dampers	Oiling System	Oil Cleaner?	Radiator Shutter	Carburetor	Air Cleaner?	ELECTRICAL SYSTEM		Clutch—Type and Make	Gear Set—Make	Universal—Type and Make	REAR AXLE		BRAKES		Steering Gear—Make	Rear Springs—Type and Length	Chassis Lubrication—	ABBREVIATIONS—NAMES OF MFRS. OF STOCK PARTS	
																			Generator and Starter Make	Ignition System				Foot—Type and Location	Type and Make	Hand—Type and Location	4-Wheel Type					
Auburn.....	76	28x5 25	Lyc.....	WS 6-27x43 1/2	19.8	185 L	L	88-3700	5.05	Ch.	Als.	4	Y	PG	N	N	N	N	N	D-R	D-R	P.Long.	War.	m-U.P.	1/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bi	A-Bas—American-Bosch
Auburn.....	88	30x6 00	Lyc.....	GS 8-27x43 1/2	23.8	207 L	L	105-3700	5.13	Ch.	Als.	5	Y	PG	N	N	N	N	N	D-R	D-R	P.Long.	War.	m-U.P.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bi	A-K—Atwater Kent
Auburn.....	115	30x6 20	Lyc.....	MD 8-31x43 1/2	23.8	207 L	L	115-3700	5.35	Ch.	Als.	5	Y	PG	N	N	N	N	N	D-R	D-R	P.Long.	War.	m-U.P.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Ze	A-L—Auto-Life
Buick.....	115 1/2	31x5 25	Own.....	6-31x43 1/2	23.4	207 L	L	62-2800	4.70	He.	C.I.	4	Y	PC	N	N	N	N	N	D-R	D-R	D.Own.	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Ze	Ada—Adams
Buick.....	120-128	33x6 00	Own.....	6-31x43 1/2	29.4	274 L	L	77-2800	4.3	He.	C.I.	4	Y	PC	N	N	N	N	N	D-R	D-R	D.Own.	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Ze	Alm—Alm
Cadillac.....	341	32x6 75	Own.....	8-31x43 1/2	35.1	341 L	L	90-3000	4.9	Ch.	NT	3	N	PH	N	N	N	N	N	D-R	D-R	dp.Own.	Own.	m-Spi.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Al	Am—Almetel
Chandler.....	124	32x6 00	Own.....	135-31x43 1/2	33.7	331 L	L	82-2600	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Am—Almetel
Chandler.....	109	30x5 00	Own.....	131-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chandler.....	109	30x5 00	Own.....	131-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chandler.....	124	30x5 00	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chandler.....	107	30x4 50	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	133 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N	N	N	D-R	D-R	P.B&B	Own.	m-Own.	2/2 Col.	4.9	L-F	E-T	Ros.	5.563 1/2	Bo	Bal—Ball & Ball
Chrysler.....	132 1/2	29x4 75	Own.....	137-31x43 1/2	23.4	194 L	L	46-3000	5.0	Ch.	C.I.	3	Y	PH	N	N	N															

Wis—Wisconsin
Ze—Zerk
Zen—Zenith
Y—Yes
Tr—Transverse
V—Canilover
V—Vacuum servo
Var—Varies
X—Sleeve valve
Pu—Pump
Q—Quarter elliptic
R—Rectifier
S—Semi-elliptic
PC—Pressure to mains, rods
PD—Pressure to mains, rods, wristpins
PE—Pressure to mains, rods, wristpins, timing case
N—Nickel Iron
O—Optional
Oc—Oil cups
OG—Oil and Grease Cups
H—Hydraulic (brakes)
He—Helical gear
I—In head
I—Internal four wheels
I—Internal rear wheels
E—Full elliptic
E—External four wheels
E—External rear wheels
E—External transmission
F—Fabric
Al—Aluminum
Al—Aluminum with Strut
B—Semi-steel
B—Internal front and external rear

only of Lockheed Hydraulics is this true



HYDRAULIC BRAKE COMPANY • DETROIT, MICHIGAN, U. S. A.

LOCKHEED HYDRAULIC

Four BRAKES Wheel

LH

ONE kind of brakes, and one kind only, enjoys a solid public preference.

One kind, and one only, has the advantage of a favorable *mass* opinion.

Those brakes are Lockheed Hydraulics.

Everywhere motor cars are driven, Lockheed Hydraulics are known by name and through their superior performance.

Everywhere they are spoken of by those who use them, as safer brakes.

They are regarded as easier to apply.

They stop a car more smoothly, more evenly.

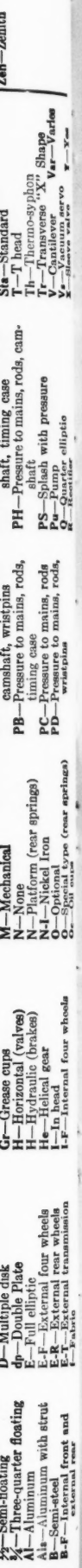
They are *always* perfectly equalized, because of the hydraulic principle.

Because the public knows these things about Lockheed Hydraulics, and appreciates their unequalled simplicity, their ease of adjustment and low cost of maintenance, millions of men and women prefer Lockheed Hydraulics.

That is the situation which is helping to increase sales for manufacturers of cars equipped with Lockheed Hydraulic Four Wheel Brakes.

MAKE AND MODEL	(Wheel Base)	Tire Size	Make and Model	Bore and Stroke	Rat. H.P.	Plate Dis. placement	Valve Arrangement	Maximum Brake Horsepower at Specified Speed	Compression Ratio	Camshaft Drive	Piston Material	No. Main Bear.	Crankshaft Vib.	Oil Cleaner?	Radiator Shutler	Carburetor	Air Cleaner?	ELECTRICAL SYSTEM		Clutch-Type and Make	Gear Set—Make	Universal—Type and Make	REAR AXLE		BRAKES		Steering Gear—Make	Rear Spring—Type and Length	Chassis Lubrication—	ABBREVIATIONS— NAMES OF MFRS. OF STOCK PARTS
																		Generator and Starter Make	Ignition System				Type and Make	Foot—Type and Location	Hand—Type and Location	4-Wheel Type				
Kiesel 8-50	125-132	31-6 30	Ovn.	80	27-4 1/2	948	70-2000 5 15	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-Bos—American-Bosch
Kiesel 8-50	131-139	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Kiesel 8-50	135-136	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	125-132	32-6 75	Ovn.	80	27-4 1/2	948	70-2000 5 15	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	131-139	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	135-136	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	139-140	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	143-144	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	147-148	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	151-152	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	155-156	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	159-160	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T	H	Ross	S-60	Al	A-K—Atwater Kent	
Le Salle 8-70	163-164	32-6 75	Ovn.	90	31-1 1/2	909	100-3000 4 8	115-2400 5 15	Ch.	Al.	Al.	5	Y	Y	Y	Y	Y	D-R	P.B&B	W.G.	m-Mec	Col.	4 1/2	E-T						

- Others Used
- At extra cost
- On Royal models only
- Semi-floating
- Three-quarter float
- Aluminum
- Aluminum with steel
- Semi-steel
- F—Internal front air



Joseph B. Graham
Robert C. Graham
Ray A. Graham

The Plants

When the three Graham brothers returned to the automotive industry after an absence of approximately a year, they were primarily interested in acquiring a plant in which they could give full scope to their ideas of manufacturing efficiency and integrity.

They found in Paige, as they announced at the time of the purchase, a number of the factors they sought. They found a spacious plant, strategically located, and offering excellent possibilities for the development of thoroughly modern production methods.

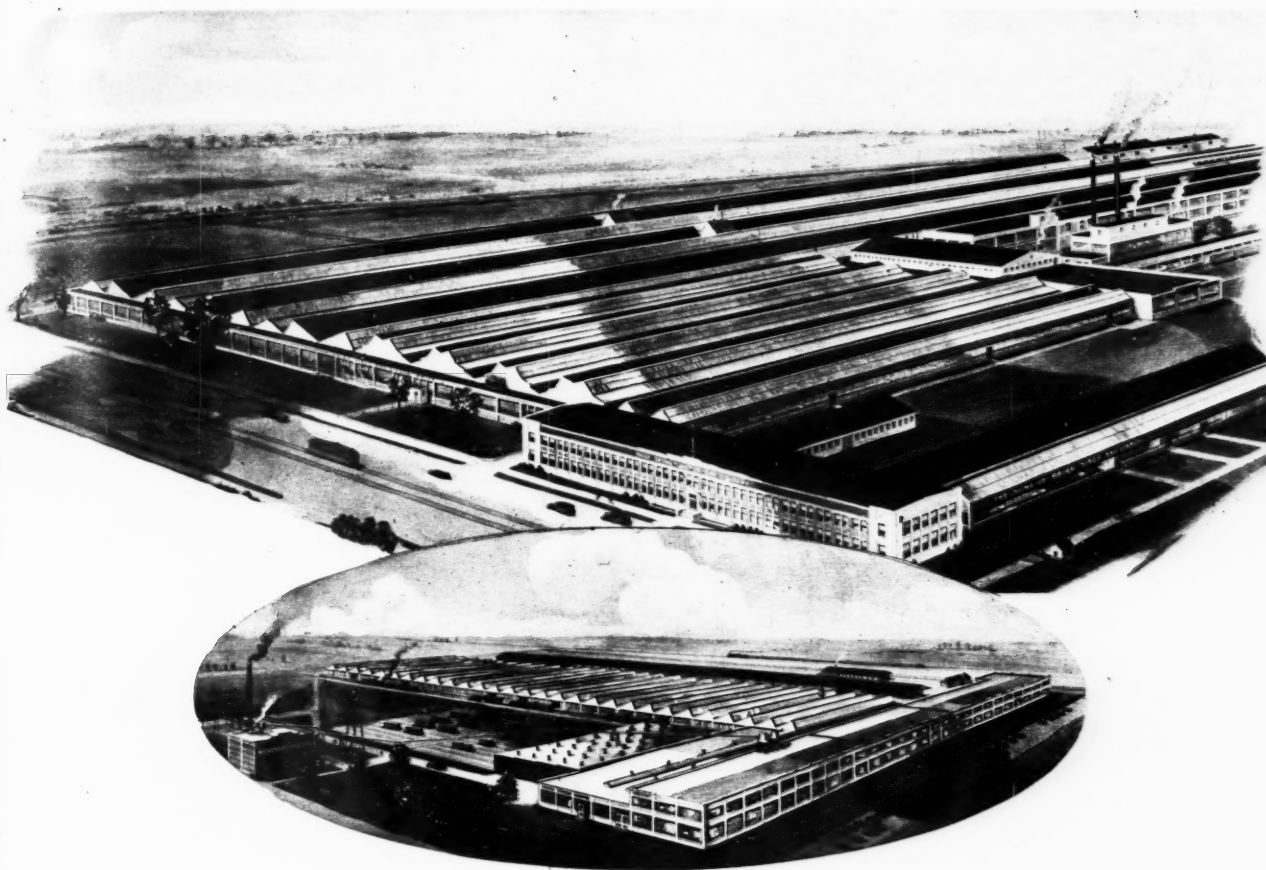
The minute the necessary formalities in connection with the purchase were concluded, (which included the providing of millions of dollars work-

ing capital), the big job of fitting the plant for quality production on a large scale was begun.

Construction was started immediately on a number of additional factory units, which are now completed. In the meantime, by separate purchase, a large plant at Wayne, Michigan, was acquired and completely changed over and equipped for the production of Graham-Paige bodies. An entire new floor was added to one wing of the Wayne plant, materially increasing the floor space. Total floor space of Graham-Paige factories is now 1,125,670 square feet.

A great quantity of new equipment has been installed in both the Detroit and Wayne plants. More-

GRAHAM



Main Graham-Paige Plant, West Warren Avenue, Detroit, to which extensive additions have been made.

Graham-Paige Body Plant, Wayne, Mich., completely reorganized, equipped and much enlarged.

over, Graham engineers have gone through both plants, reorganizing and developing improved production facilities and methods.

Particularly proud of these plant facilities is Joseph B. Graham, who is in charge of production. Commenting on Graham-Paige facilities, he said, "We can build fine cars here—and economically, too. Our

plants are adequate in size, complete in equipment and efficient in personnel"

As a result of their splendid plant and manufacturing facilities, it is the general belief in the automotive industry that the Graham-Paige Motors Corporation stands on the threshold of a period of remarkable growth and substantial success.

-PAIGE



An Invitation *from the* three Graham brothers

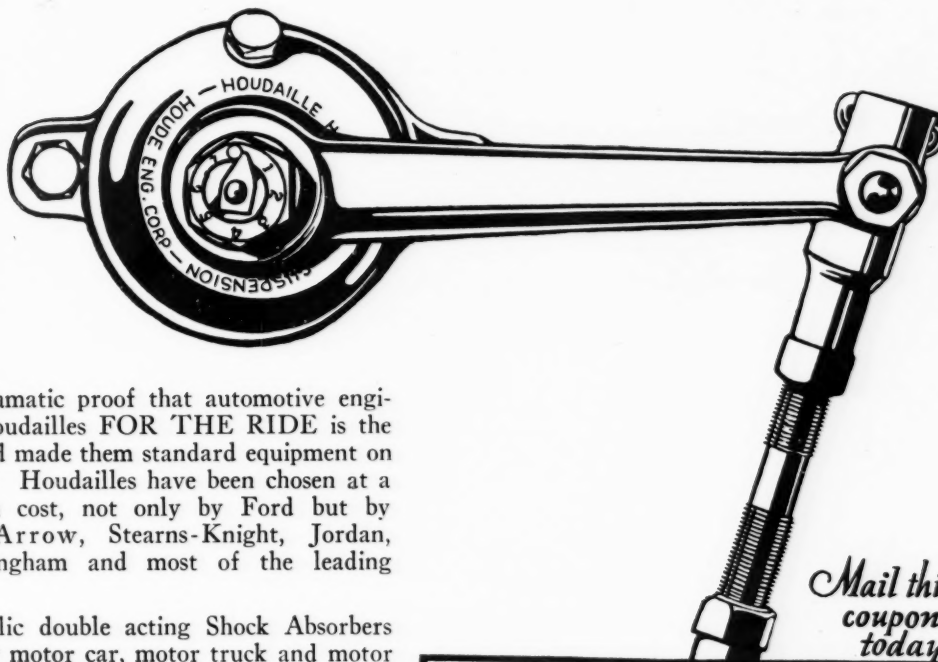
We invite dealers who possess Character, Capability and Capital to communicate with the factory for information concerning the availability of the Graham-Paige franchise in their territories. Wire, phone, or write.



GRAHAM-PAIGE MOTORS CORPORATION
Detroit, Michigan

GRAHAM-PAIGE

THEY HAD
THE WORLD
TO CHOOSE FROM
and they chose ~ ~ ~
HOUDAILLE
Hydraulic Double-Acting
SHOCK ABSORBERS
for the RIDE



THE most dramatic proof that automotive engineers buy Houdailles FOR THE RIDE is the fact that Ford made them standard equipment on the new Model A. Houdailles have been chosen at a great difference in cost, not only by Ford but by Lincoln, Pierce-Arrow, Stearns-Knight, Jordan, McFarlan, Cunningham and most of the leading European cars.

Houdaille Hydraulic double acting Shock Absorbers are made for every motor car, motor truck and motor coach that rolls on wheels.

When you think of shock absorbers—remember that Houdailles are being chosen for the RIDE.

Distributors: There is some desirable territory available on a direct-with-the-factory basis for the Houdaille Franchise. Mail the coupon today for complete information.

*Mail this
coupon
today!*

HOUDAILLE ENGINEERING CORPORATION

Dept. M. A. 4,

537 E. Delavan Avenue

Buffalo, N. Y.

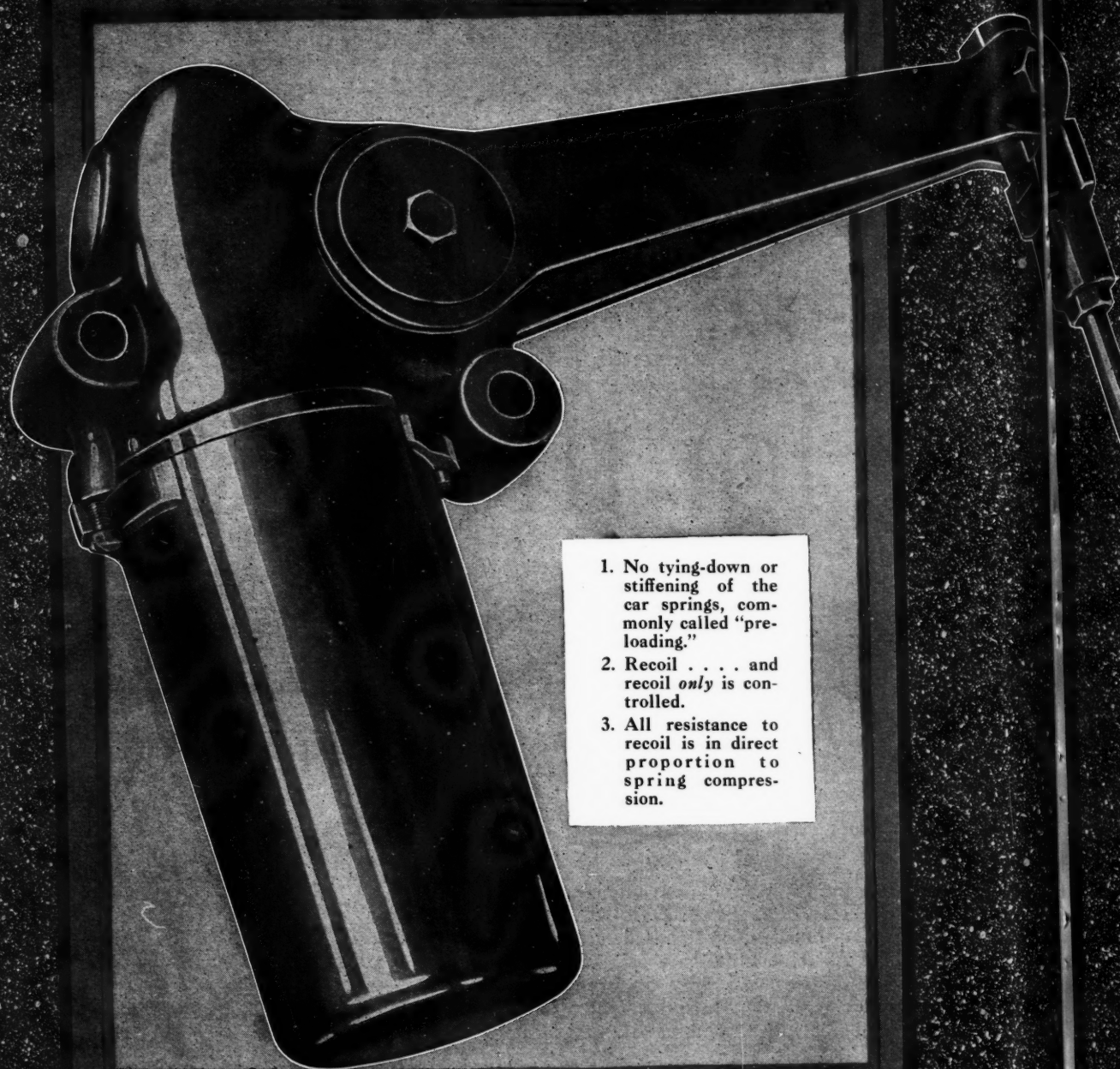
Please send me details and price list of Houdaille Shock Absorbers.

Name

Address

City State

Every man who sells Shock Absorbers



1. No tying-down or stiffening of the car springs, commonly called "pre-loading."
2. Recoil and recoil *only* is controlled.
3. All resistance to recoil is in direct proportion to spring compression.

The **LANDIS**
TRUE HYDRAULIC CONTROL

ers should have this Book!!

FREE!

A complete
unbiased review
of all types of
Shock Absorbers



Write for your free copy!

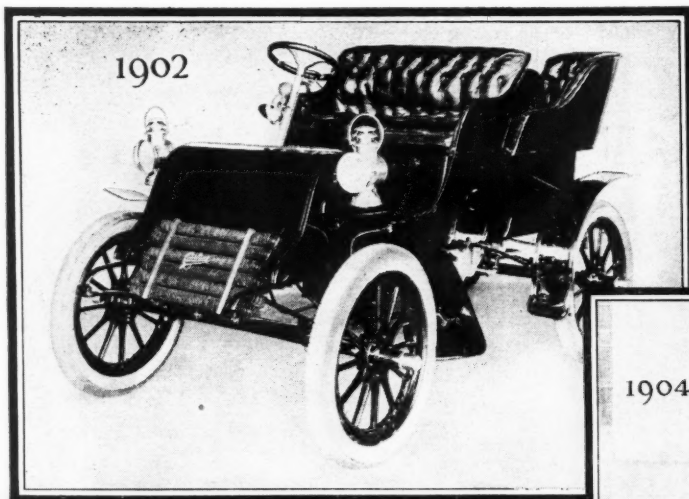
What do you want to know about Shock Absorbers? This book "The Landis Idea of Easy Riding" covers the complete subject of Spring Action, Spring Recoil Control and Shock Absorbers of all types. No one who merchandises Shock Absorbers, regardless of make, can afford to be without a copy of this book.

Write now for your copy. It's free to any member of the trade.

Landis Engineering & Mfg. Company
Automotive Division
Waynesboro Pennsylvania

Shock Diffuser

OF SPRING RECOIL



1902

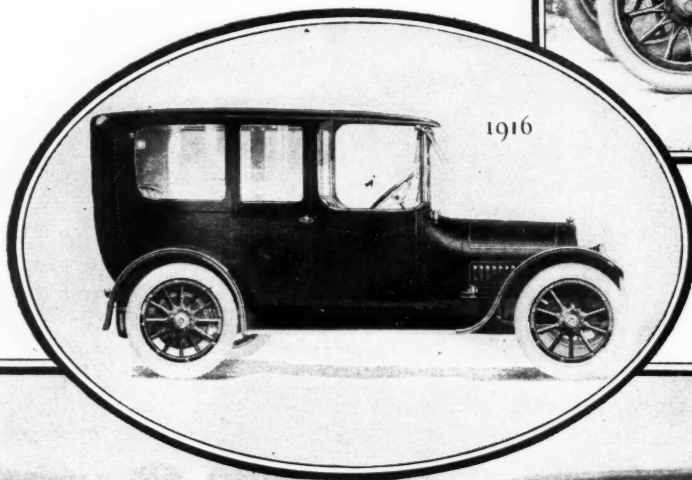
Left. One of the first Cadillacs. In those days the all-important question was whether an automobile would go.

Below. Two years later the Cadillac body had developed into a "tonneau" with room for four passengers.



1904

Below. The Cadillac of 1916—with one of the early closed bodies by Fisher.



1916

Below. The Cadillac of 1928, with a closed body which represents all the skill and the resources of Fisher Body and General Motors.



GENERAL

CLOSED BODIES *and* THE OPEN MIND

IN 1908 the Fisher Body Corporation was organized. Its first large order was for fifteen closed bodies for Cadillac.

Today this member of the General Motors family produces more than one million closed car bodies annually. An art embodying the finest craftsmanship has been expanded into a great business, with larger values to the public and an even higher standard of artistic performance.

On the opposite page are photographs which tell the Fisher story more powerfully than any words. Unceasing improvement!

Ten years ago the bodies seemed luxurious. Five years ago the remark was common: "Surely no further improvement can be made."

But Fisher has never stopped. It has created and maintained a notably distinctive body for each of the General Motors cars; but, by its experience with so many bodies, in such widely varying types and classes, it has been able every year to achieve more comfort and more luxury of appointment throughout the entire line.

Working with all the members of the General Motors family, Fisher has helped each one, and been helped by each in turn. Its record is a striking testimony to the value of mutual cooperation—and an open mind.

PRODUCTS OF GENERAL MOTORS

"A car for every purse and purpose"

CHEVROLET
PONTIAC
OLDSMOBILE
OAKLAND
BUICK
LANSALLE
CADILLAC

All with Body by Fisher

GENERAL MOTORS TRUCKS
YELLOW CABS AND COACHES

FRIGIDAIRE
Electric Refrigerators

DELCO-LIGHT
Electric Plants

Delco-Remy Electrical Equipment-Harrison Radiators-Delco-Remy Lovejoy Shock Absorbers-Jacox Steering Gears-AC Spark Plugs-AC Speedometers-AC Oil Filters-New Departure Ball Bearings-Jaxon Rims, Wheels and Tire Carriers-Brown-Lipe-Chapin Differentials-Hyatt Roller Bearings-Inland Steering Wheels-Klaxon Horns

General Motors passenger cars, Frigidaire electric refrigerators and Delco-Light electric plants may be purchased on the low-cost GMAC Time Payment Plan

TUNE IN—General Motors Family Radio Party. Every Monday evening, 9:30 Eastern Standard Time. W E A F and 29 other stations associated with N. B. C.

MOTORS

*You wouldn't
dispute that
 $2 + 2 = 4$*

Greater Profits with a **CHRYSLER** FRANCHISE

*are based on an equally
simple business fact -*

The Chrysler Sales Agreement today represents the best franchise in the industry because it represents the best opportunity for the dealer to make money—and to make money is the one and only reason why you are in business.

In any business there are a number of different layers, or classes of buyers.

The top layer represents the so-called "quick-sales" which come into the salesroom as the result of advertising, recommendations of friends, repeat customers, etc.

The second layer, slightly harder to get, is that which you obtain by personal selling and demonstration.

The third layer are the buyers who are not immediate prospects.

The next layer is that business which you get only in rare cases.

The dealer who has one car will get a certain number of the so-called "quick-sales," depending entirely upon the volume and effectiveness of advertising behind the product, upon the number and good will of his owners and the reputation of the product.

Obviously, the dealer who





SELLER

has four such lines of cars, covering all price ranges, appeals to four such groups, thus getting four times that number of such sales.

Chrysler dealers, undoubtedly, obtain a greater percentage of these sales than any other group of dealers. Their product is and always has been right. Chrysler advertising has built up tremendous prestige, respect and good will for Chrysler cars. More than a million and a half owners are spreading the story of Chrysler performance and dependability.

In that topmost layer Chrysler dealers have a decided advantage—the advantage which so often spells the difference between profit and loss.

The potentialities of the second, third and fourth layers depend upon the aggressiveness and ability of the individual dealer, PLUS the conditions which affect the top layer. The dealer must go out and get the business, but, obviously, the business will be easier to get if the public knows and likes the product.

Thus, the main factor that enables a dealer to make more money with Chrysler than with any other line is that he can obtain a larger volume by working in four markets with products ranging in price from \$670 to \$3495 for which every man he talks to is a definite prospect, than he can with one or two.

Add to this fundamental profit-making fact the additional Chrysler franchise features—a special agreement for the “52” only, which, however, permits you to sell all Chrysler cars; competitive superiority; competitive discounts; sales service; advertising and accounting helps; and fair factory policies—and you readily realize why a Chrysler connection offers more than any other franchise in the industry today.

Opportunity to form your most profitable connection may be knocking at your door this very moment. Perhaps we need a man in your community. Get in touch with us immediately by mail, telegraph or telephone. We will hold your inquiry in strictest confidence.

CHRYSLER SALES CORPORATION, DETROIT, MICHIGAN
CHRYSLER SALES CORPORATION OF CANADA, LIMITED, WINDSOR, ONTARIO

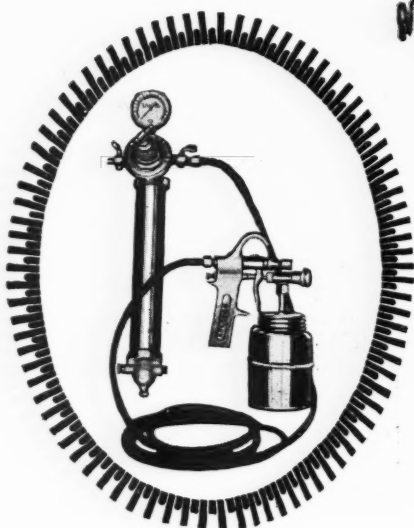
'52' '62' '72' Imperial '80'

KELLOGG

COMPRESSORS

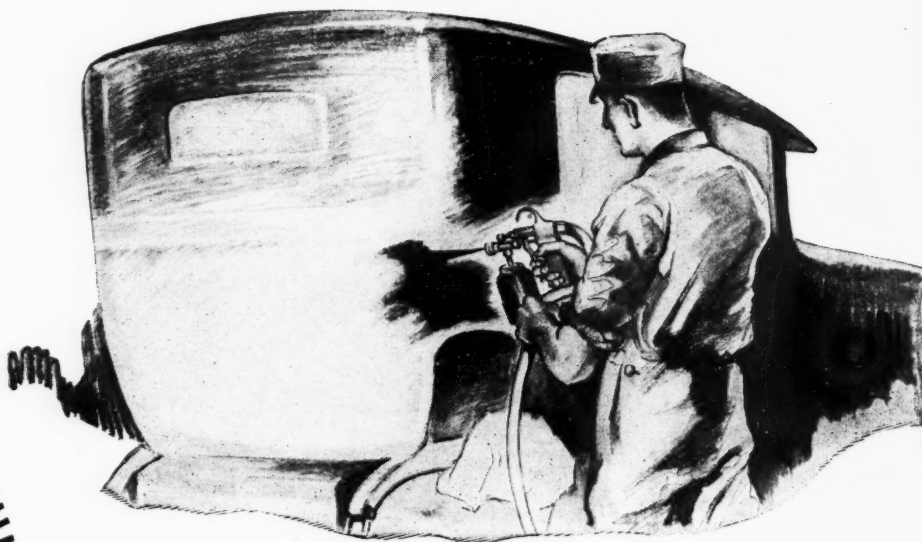
Price

\$51.50
NET



It consists of:

KELLOGG Type "C" Spray Gun
Fan Spray Head
Round Spray Head
Quart Metal Suction Cup
Type "Y" Air Transformer
25 ft. Air Hose with fittings



It Will Soon Pay for Itself

The automobile dealer who refinishes his own used cars or does an occasional touch-up job finds the KELLOGG 53 Spray Gun Group a profitable piece of equipment.

The gun is perfectly balanced with comfortable handle and two-finger trigger and is easily cleaned and adjusted. The transformer is full sized, efficient and equipped with all necessary shut-off and drain cocks as well as an extremely reliable pressure-regulating valve and gauge.

Ask your jobber about the KELLOGG 53 Spray Gun Group—you can't afford to be without one!

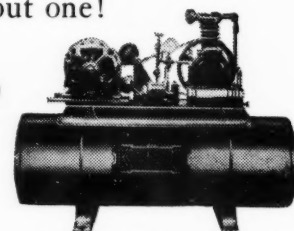
A Two-Fisted Worker in Any Shop

Price

\$224.00
NET

Every shop that requires a large volume of air for cleaning, lubricating, paint spraying, air-operated gasoline pumps, and all the other uses to which air is now being put, will find the KELLOGG EM-261-S particularly desirable.

Like all KELLOGG Compressors, it is priced at a figure that proves the KELLOGG policy of "More for your Money."



KELLOGG EM-261-S

Specifications:

8 cubic ft. of air
1½ horsepower motor
18" x 48" tank
Self-cleaning check valve
Patented KELLOGG Pump and
Splash Lubricating System
Honed cylinders
Air cleaner and muffler

KELLOGG MANUFACTURING CO.

200 HUMBOLDT STREET

ROCHESTER, N. Y.



NIGHT

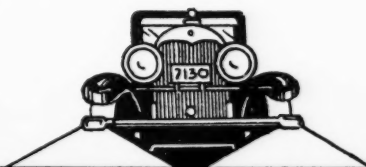
THE eyes in the Bright Bumper pierce the night as the eyes of the beast spot their prey. These "eyes" are the two powerful driving lights at either end of the bumper. Ditches, holes, obstructions stand out boldly before you. Danger of side-swipe is gone. Fog is dispelled like magic. Approaching drivers turn out. The Bright Bumper ends and lenses (replaced free if you ever break 'em) have made night driving safe and comfortable.

The Warren Tool & Forge Co.

OR DAY

And, in daytime as at night, the Bright-equipped car is more than amply protected. No other bumper is huskier. No other bumper will withstand a greater impact. No other bumper is nearly so beautiful. Here is night-time safety, daytime peace of mind and ultra-smart appearance. Approved by Underwriters Laboratories of course. Here's selling advantage! Get the facts and your discounts. Write for them today.

500 Griswold St., Warren, O.



BRIGHT BUMPER

A prominent railroad executive says, "The public demand for all-steel railroad cars has been so effective that to-day a car with a wooden body is almost an oddity."

The time is coming when the same thing will be said of the automobile.

. . .

EDWARD G.

BUDD

MFG. CO.

Philadelphia and Detroit



**In the
Service of
the Motor
Industry—**

Arrow Head

**has supplied four great
“initiatives”**

- 1.** Arrow Head years ago adopted the most advanced electrical heat treatment to produce pins with a glass-perfect surface and an intensely tough core.
- 2.** Arrow Head developed piston-and-pin accuracy to the point where try-fitting is a needless motion.
- 3.** Arrow Head first assembled pistons in sets balanced to a quarter ounce, advancing motor tuning and relieving engine vibration.
- 4.** Arrow Head first assembled pistons with pins and supplied them for both equipment and service in balanced assemblies ready to slip into cylinders.

However rigid and difficult your metallurgical and mechanical specifications, you can standardize on Arrow Head assemblies and fit them directly into your cylinders without try-fitting. Why not reduce some 27 engineering, purchasing, stock-keeping, inspection, production and accounting operations with Arrow Head “ready-to-run” piston-and-pin assemblies?

Yardstick indicates range of Arrow Head piston diameters from about 12" to less than 2".

ARROW HEAD STEEL PRODUCTS COMPANY

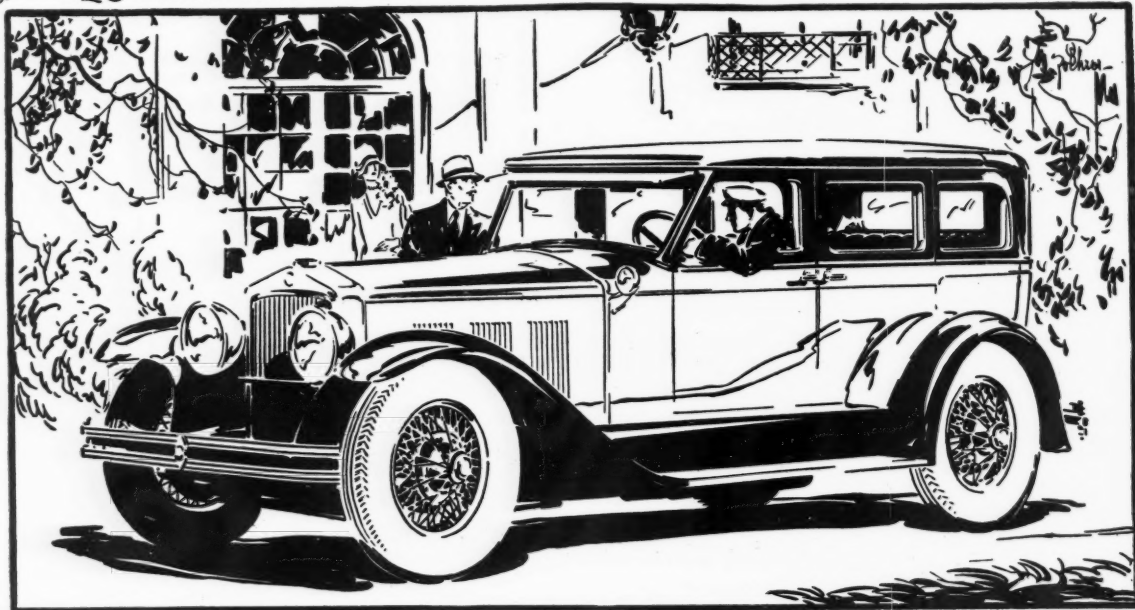
Buffalo

MINNEAPOLIS, MINNESOTA

Chicago

Arrow Head

Pistons ♣ Piston Pins ♣ Axle and Drive Shafts

20th ANNIVERSARY MODELS

The new Velie 8-88 Royal Sedan. A straight eight on 125" wheelbase. Velvety riding comfort at speeds exceeding 80 miles per hour if desired.

VELIE *differs* from your neighbor's car

YOU tire of seeing the same endless style of cars . . . beautiful and efficient no doubt . . . but standardized beauty which palls by its quantity and finally becomes commonplace.

The eye is gorged . . . you crave distinction from your neighbor . . . you really don't want your car to be a monotonous model. Here is where Velie fits into your mental picture.

Distinctive and different, we have always chosen the path of quality production rather than that of mass production.

So, in the new 20th Anniversary series of sixes and straight eights presented as

the final expression of the wealth of experience acquired during these years, you will discover *your* car . . . your personal car.

Superb performance . . . striking individuality . . . a welcome divorce from sameness.

Seven models await your inspection, and each will inspire your desire for possession.

And you will make another discovery. You will realize, when you compare the modest prices with values offered, one of the cardinal reasons for that priceless Velie asset . . . 20 years of public confidence.

VELIE MOTORS CORPORATION, Moline, Illinois

A comprehensive national advertising campaign with a background in the Saturday Evening Post has been evolved and we assist our dealers in every possible practical way. Confident in the merits and generous terms of the Velie franchise we invite correspondence from Distributors and Dealers. Excellent territory is open so write immediately but preferably wire. The Velie franchise is based on the Golden Rule.

Long Life

VELIE

OWNED AND OPERATED
BY ITS FOUNDER
... 1908-1928 ...

VELIE SIXES AND EIGHTS RANGE IN PRICE FROM \$1195 TO \$2095, F. O. B. MOLINE, ILLINOIS—FULLY EQUIPPED

**Built
to automotive
standards**

(1) Disc valves-in-head; die-cast bearings; honed cylinders; precision ground pistons, pins, rings and crankshaft.

(2) Produced by a million-dollar company, 74 years in business, 30 years specialization in pneumatic engineering.



**CHECK ITEMS IN
WHICH INTERESTED**



Style "V" Two-Stage Compressor. Air-Cooled. $\frac{1}{4}$ to 2 H.P.



Automatic Air Mist Car Wash System. A complete cleaning service.



Hydraulic Car Washer. 1 H.P.; 2 H.P.; 3 H.P. over-size.



Rotating Auto Lift. Oil-locked. Roll-on or Free-Wheel Type



Air Stands. Reel type or tower type. Easy to operate.



Air Lift. For raising one end of car. Excellent for washing underside.



Paint Spray Compressor. Hand un-loader. (By-pass for starting.)



Model "A" Water-cooled Air Compressors. Full self-oiling. 3 to 50 H.P.



Air Hoists, Cranes, Trolleys. Fast, economical, speed up production. B4



Curtis

Pneumatic Machinery Company

St. Louis

**74th
Year**

1957 Kienlen Ave., St. Louis

518-U Hudson Terminal, New York

a.c.f.

Comparative sales

today, in any class of cars, represent a pretty close comparison of performance. Carbureters certainly have much to do with engine performance. Cars with Carter carburetion are among the top-most sellers of the Industry.

Carter carbureters help to sell by doing their stuff every time! That counts, in the demonstrations that make the sales, and in the satisfaction that makes the car's reputation and the dealer's business.

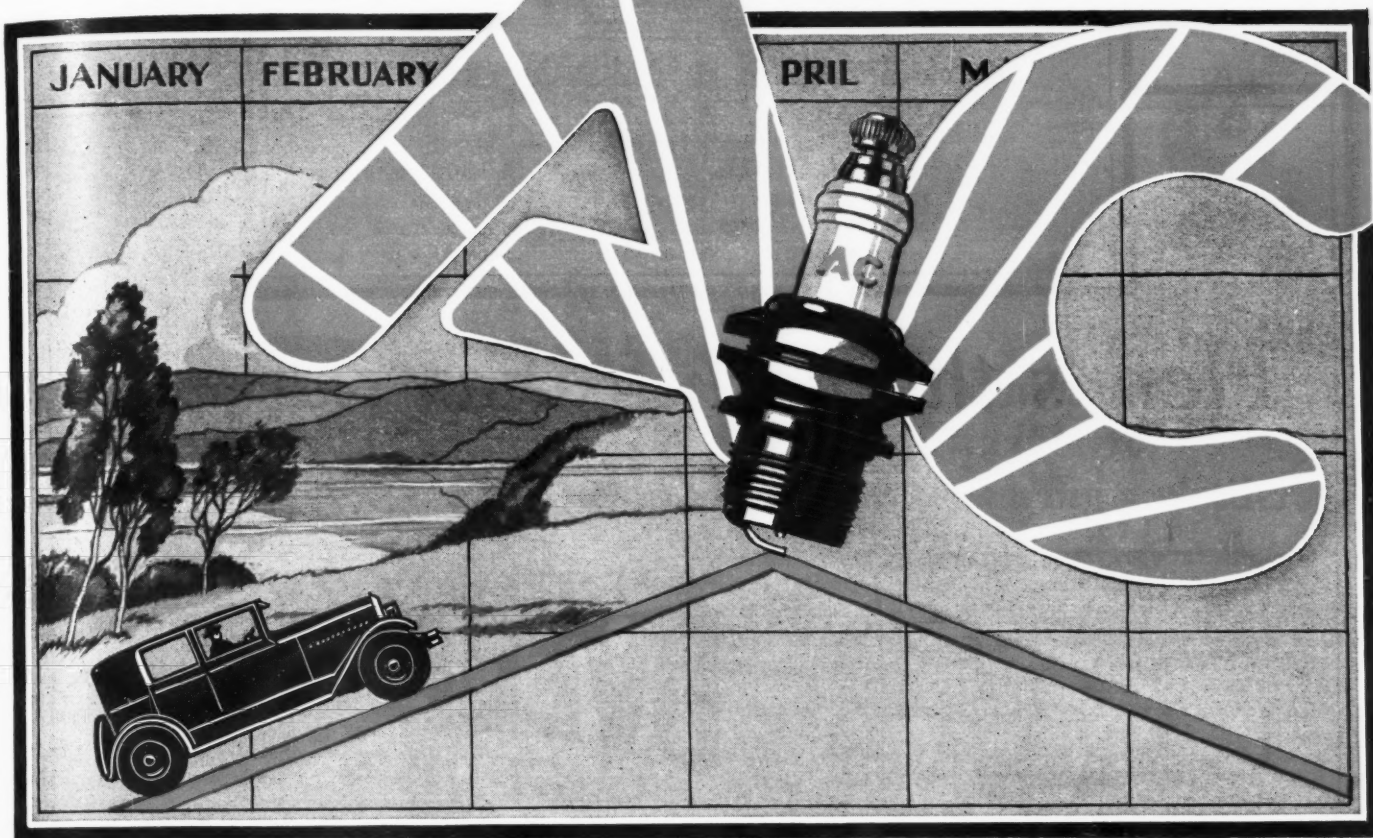
Every Carter carbureter is made to do it, by being designed and built as if its individual excellence alone must be responsible for Carter volume, the largest in the world.

CARTER CARBURETOR CORPORATION, SAINT LOUIS
DIVISION OF AMERICAN CAR AND FOUNDRY COMPANY

CARBURETER

THE STANDARD

SPARK PLUG OF THE WORLD



April is a Good Month for the Dealer who works fast

YOU can hoist your profit curve to a new height by putting your business in step with the spring needs of your customers.

Get right down to cases, sell 'em a new set of AC Spark Plugs. Tell them why — improved performance, lowered operating cost, longer life for the engine.

While you've got the bonnet up, test the oil filter. Tell the car owner dirt in oil means wear and that is why he should have the Oil Filter tested regularly. Tell him an AC Renewal Cartridge makes the Oil Filter as good as new. Right now is a good time to test the Oil Filter.

Your AC replacement market is big now and

getting bigger every day. Nearly all popular makes of cars now use one or more AC products as factory equipment. Among them are:

Auburn
Buick
Cadillac
Chandler
Chevrolet
Chrysler
Davis

Dodge Brothers
Duesenberg
Durant
Elcar
Essex
Graham-Paige
Hudson
Hupmobile

Kissel
LaSalle
McFarlan
Moon
Nash
Oakland
Oldsmobile
Packard

Peerless
Pontiac
Reo
Star
Stearns-Knight
Studebaker
Stutz
Yellow Cab



Passing your door every day is your fair share of the greatest replacement business in the world. It's yours if you go after it. April, 1928, will be a big month for the dealer who works fast.

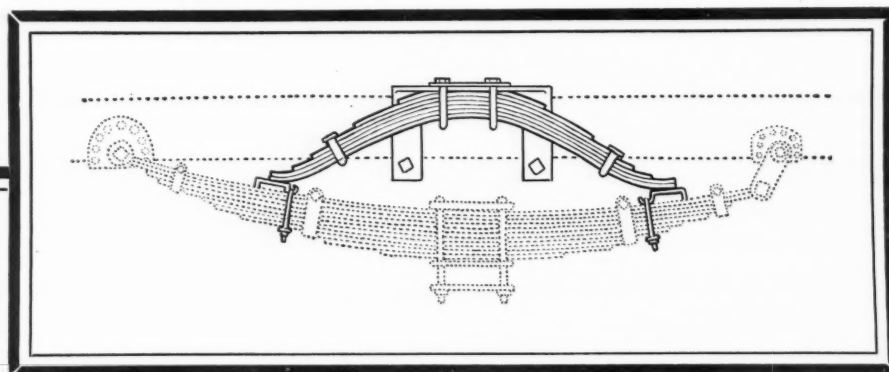
AC-SPHINX
Birmingham
ENGLAND

AC Spark Plug Company
FLINT, Michigan

AC-TITAN
Clichy (Seine)
FRANCE

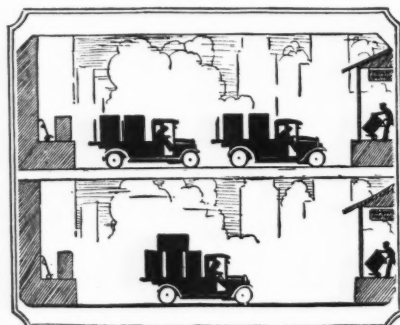
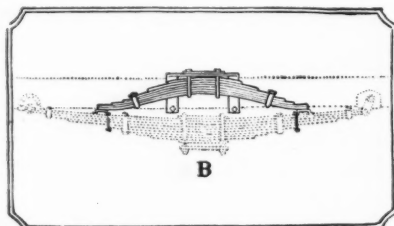
AC SPARK PLUGS AC SPEEDOMETERS AC AIR CLEANERS AC OIL FILTERS AC FUEL PUMPS
AC GASOLINE STRAINERS AC AMMETERS AC OIL GAUGES AC THERMO GAUGES

© 1928, AC Spark Plug Co.



Here's the spring they're
all talking about—

TRAINOR OVERLOAD SPRING



Some of the Trucks that Trainor Overload Springs Fit

Chevrolet—

1 ton—Model RX—1925
1 ton—Model X—1926-27-28

Graham Bros—

1½ ton—1924-26-27-28

Graham G-Boy—

1 ton—1926-27-28

Federal-Knight—

1 ton—1926-27-28
1½ ton—S 25—1925-26-27
1½ ton—S 23—1926-27-28

G. M. C.—

1 ton—Model T 20—1927-28
1½ ton—Model T 20C—1927-28
2 ton—Model T 40—1927-28

Stewart—

2-3 ton—1927-28

THE spring that every light truck needs—for it makes it safe to add a ton to the normal load without danger of spring breakage. Here's a big market waiting to be sold—thousands of truck owners who really need and want this money-saving spring.

Easy to Attach

Trainor Overload Springs can be attached by any ordinary mechanic in less than an hour—no holes to drill—no alterations of frame necessary—only one wrench needed. Absolutely nothing to get out of order.

Here's How They Work

The upper illustration shows the spring under a light load. The Overload Spring does not come into play. The illustration at the left shows the spring under excess weight bringing the Overload Spring into play, taking up the added tonnage.

A Shock Absorber, Too

Shocks and jolts are automatically taken up—never reach chassis or driver. Sidesway is also eliminated and one-sided loads ride evenly.

Ask Your Jobber

Trainor Overload Springs are handled by reliable jobbers and Spring Service Stations. Write yours today for complete information—or if you prefer, write direct.

TRAINOR
NATIONAL SPRING CO.
New Castle • • Indiana

The Ames CYLINDER GAUGE Plain Handle Model

Does this important work in cylinders from 2½" to 5¾" diameter. Tests all cylinders for straightness and roundness. Accurately measures taper and out-of-roundness. Compares sizes of cylinders in motors. Measures exact diameter of each cylinder. Tells amount of oversize pistons and rings to use. Sells cylinder refinishing and replacement parts.

**Price only
\$15.00**



*Recommended by Motor Car
Manufacturers for Their Service Stations*



—built on the
only correct
principle for
measuring cylinders

Patented two point principle gives absolute cylinder diameter between two opposite points directly through axis or center of cylinder. (Any gauge using three point contact principle gives incorrect reading.)

Made also with Setting Tool Handle. Price \$17.50.

B. C. Ames Co.
Waltham, Mass.



*"Mike" new over size piston and set cutter
head to same size.*

A "Mike" a Cylinder Gauge and a Stormizing Machine

IT'S so simple, it's almost unbelievable. Cylinder renewing sounds like technical, difficult work, but it's not if you have Stormizing Equipment.

A "mike," a cylinder gauge and a Storm Machine do the job. Estimate the over-size needed for the new cylinder bore, adjust in five minutes the Storm cutter head, place the machine over the first cylinder to be renewed, turn the switch and the rest is automatic; even to stopping when the cylinder is rebored. Slide the machine over to the next cylinder and repeat. The Storm pilots from the unworn face of the cylinder block. It can't be other than accurate and square with crankshaft.

Any mechanic can operate a Storm—because accuracy is always under definite control. Stormizing Equipment in your shop will mean increased profits and increased business.

Write for our booklet, "Stormizing as a Business and Process." It's free and full of valuable information.

STORM MANUFACTURING CO., INC.
406 (A) 6th Ave. So. MINNEAPOLIS, MINN.

STORMIZING

THE ACCURATE METHOD OF CYLINDER RENEWING

Confidence and Respect

Above and beyond all other considerations is the fact that the combined trade circulations of *Automobile Trade Journal* and *Motor Age*, approximately 75,000 paid, reach and cover in excess of 85% of the automotive dealer purchasing power in the United States.*

These two well-edited publications are not only subscribed for and paid for, but command the confidence and respect of the consequential components of our vast net work of automotive dealers from the Atlantic to the Pacific, and from Canada to Mexico.

Therefore if you want new retail outlets, and if you wish to keep present retailers favorably impressed concerning the profits advantage of your product, an adequate use of *Automobile Trade Journal* and *Motor Age* will prove most effective—and pleasingly low in cost.

Chilton Class Journal Company

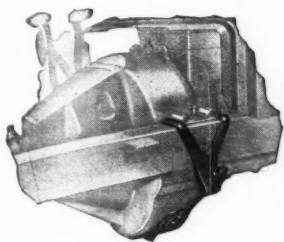
PHILADELPHIA

Publishers of Automotive Business Papers

AUTOMOTIVE INDUSTRIES
AUTOMOBILE TRADE JOURNAL
MOTOR AGE
AUTOMOTIVE INDUSTRIAL RED BOOK

MOTOR WORLD WHOLESALE
CHILTON CATALOG & DIRECTORY
COMMERCIAL CAR JOURNAL
OPERATION & MAINTENANCE

*This fact is proved. A copy of the proof will be sent if you request it.



What the Pioneer does—

For Model T Fords

PREVENTS broken crank-case arms; sets permanently those already broken. Tightens Ford Chassis. Lessens vibration. Cuts repair bills. Reduces oil leakage. Keeps nuts and bolts tight. Gives smoother-running engine. Increases riding comfort.

Pioneer Engine Support

Are you on our dealer list?
If not, write today for our attractive dealer offering.

THE BREWER-TITCHENER CORP'N

108 Port Watson Street Cortland, New York

STANDITALL
Auto RADIATOR



STANDITALL
Auto RADIATOR

They Stand Road Shocks; —Need Water Less Often

STANDITALL Core construction provides extraordinary flexibility; more heat dissipation per cubic inch means less frequent need for water replenishment.

Core Catalog Now Ready—Ask for Yours Today

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Export Department, 116 Broad St., New York City

Northwestern States
Roper-Smith Co.
310 Gorham Bldg.
Minneapolis, Minn.

Southern States
L. E. Spencer Co.
Nashville, Tenn.

Pacific Coast
Harry E. Marshall
665-7 Folsom St.
San Francisco, Cal.

STANDITALL
Auto RADIATOR

The Amber Eye



\$2.50

When Tail Lights Fail

The "AMBER EYE" warns the approaching car—is visible 1,000 feet away.

The "AMBER EYE" is a safety reflector made for passenger cars, trucks, busses, trailers, etc. Helps prevent accidents, makes night driving safer.

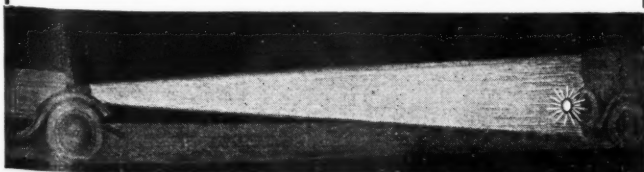
It has been approved or required by many state regulations. Its necessity is acknowledged and a quantity sale for you is assured.

Also made with red or green glass to conform with individual state laws. Display cards in each dealer carton of 10.

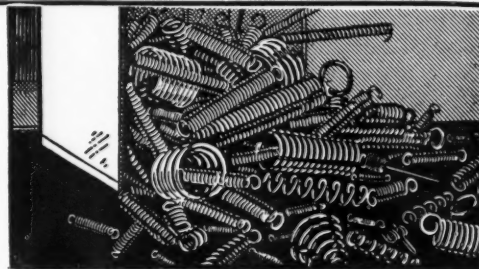
Order your stock now from your nearest jobber or write for test sample on memo billing with your jobber's name.

Manufactured by
HUNT & MOORE, INC.
New Haven, Conn.

Sales Dept.
THE ZINKE COMPANY
1323 Michigan Blvd., Chicago



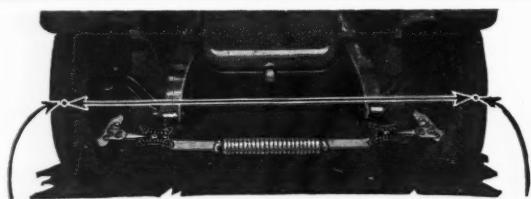
Don't Overlook Springs!



Get a Peck Spring Assortment and replace bad springs at a big profit! Assortment No. 1 shown above has more than 100 steel and brass expansion and compression springs for every need. Cost you only \$1.50—other assortments \$3.50 and \$5.00. Ask your jobber about them!

THE PECK SPRING COMPANY
Plainville Connecticut

PECK'S SPRING ASSORTMENTS



New Bear Wheel Aligner No. 10

Measures PITCH and Toe-In
from Tire Center to Tire Center
at Hub Level—Readings in
SIXTEENTHS OF AN INCH!

The most accurate and simply operated tool ever devised for aligning wheels. It finds bent spindle arms. Straightens bent and twisted axles. Lines up rear wheels so they track. And fits all cars and trucks, wire or disc wheels, 4-wheel brakes.

This tool will earn its cost the first week—from then on it's "velvet." Ask your jobber-salesman, or write at once and get full information. FREE Instruction Manual tells how to line up wheels and axles—sent on request.

BEAR MANUFACTURING CO.

Rock Island, Ill.

Also makers of the Bear Axle Gauge, Tracking Gauge, and Axle Aligning Attachments—the only Wheel and Axle Alignment Service for garages that is complete, accurate and practical.



YOU CAN GIVE QUICKER SERVICE AT LARGER PROFITS

Keep the difference when you send your rewind orders to "The Armature Rewinders." We are experts in Armature and field coil rewinding. Our prompt service and efficient workmanship make it possible for you to reap large profits.

Write for our Special Prices on Ford Armatures in Quantity.

Peatross & Arthur
"The Armature Rewinders"
1643 West Broad St.
RICHMOND, VA.

*There are Profit Making Ideas
in Every Issue of*

MOTOR AGE

Many subscribers of MOTOR AGE, who realize the value of its contents each week, route every issue regularly through their places of business to all departments.

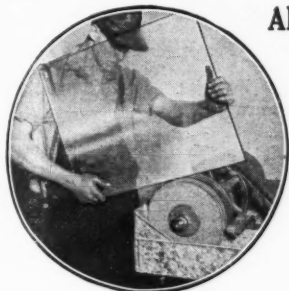
As a means of business-building this is a profitable habit to encourage, both for the benefit of the organization and its individual members. It is always best to read MOTOR AGE every week.

MOTOR AGE

CHESTNUT and 56th STS.

PHILADELPHIA, PA.

LANGE AUTO GLASS EDGERS ARE PROFIT MAKERS



YOU can make nice extra profits repairing broken auto body and windshield glass with a Lange Versatile or other Glass Edger—handle a large volume of work—and quickly pay for your edger. Did you know this? Ask us for full information today.

HENRY G. LANGE MACHINE WORKS
166 North May Street, Chicago

Mounts Chain Tightly In One Minute



The EZ-CHAIN-ON makes it possible to put chains on tightly without jacking the car, taking up the slack or soiling the clothes—all in one minute. And how they sell! List at 35c each, 65c per pair. Liberal discount. See your jobber.

Protex-A-Motor Mfg. Co.
Pittston, Pa.

EZ-CHAIN-ON
TIRE CHAIN MOUNTERS

Rubyfluid

Makes a Tight Joint

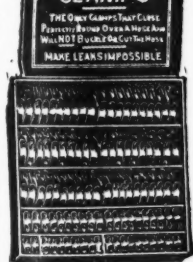


The results of your work with Rubyfluid are right. You know that before you start.

That's why this non-corrosive, non-explosive, non-injurious soldering and tinning flux is preferred by mechanics everywhere. Do a job with Rubyfluid. You'll like it.

The Ruby Chemical Co.
68-70 McDowell St., Columbus, Ohio

IDEAL HOSE CLAMPS



No. 100

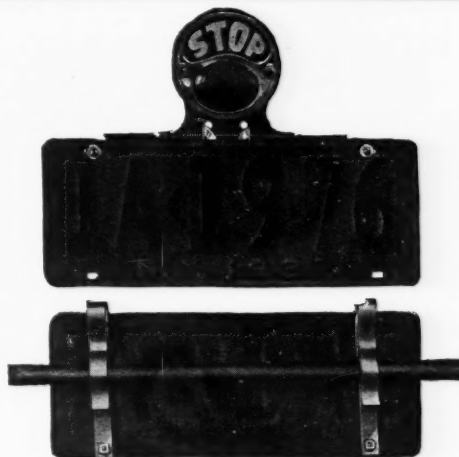
IDEAL HOSE CLAMPS in ASSORTMENT DISPLAYS

give you a small, complete stock of standard car sizes and a GOOD PROFIT.

Ask for complete catalog

IDEAL CLAMP MFG. CO. INC.
200 BRADFORD ST. BROOKLYN, N.Y.

DEALERS



SNAP ONTO THIS

Save time—labor—inconvenience—by snapping your license plate holders on and off—when you move your demonstrators about. Quick Change License Plate Holders snap on and off front bar or bumper or rear bracket. No rattle. No swing. They grip to stay. Fits every plate and every car. Snap into this and snap a set on your cars. List price \$2.00 per set.

Sales Agents Wanted in Principal Cities

Lawrence E. Woolf -- White Plains, N. Y.

QUICK CHANGE
LICENSE PLATE HOLDERS

clean
with

IF you have a steam cleaning outfit you can get greater speed and economy in cleaning chassis, or removing oil and grease from transmissions, motors and other parts during overhaul by using Oakite. A card to us will bring further details about steam cleaning the Oakite way.

Oakite is manufactured only by
OAKITE PRODUCTS, INC.
18E Thames Street New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods



PULL-A-SHADE

Pats. Pend.—Trade Mark Reg. U. S. Pat. Off.
Operates Rear Curtain from Driver's Seat
Fits Any Closed Car—Easy to Install
The spring in the walnut-bakelite box counterbalances the spring in the shade roller. If the pawls in the shade roller are removed, it stops in any position.

List Price \$3.50. Send \$2.00 for sample. Use your letter-head, please.
REN MANUFACTURING CO., 1501 Main St., Winchester, Mass.

Every Car Owner Needs

*"Common-Sense"
Closed Car
Ventilators*

Now

**Tell
Them So and
Increase Your Profits
Ask Your Jobber or**

Write ACKERMAN-BLAESSER-FEZZEY, INC., Manufacturers of
"Common-Sense" seat snubberettes for auxiliary seats in closed cars.
1258 Holden Avenue Detroit



Valve Seat Reamer Set No. 80

Handles practically 90% of all automobile motors. Includes 45° and 30°
Roughing and Finishing Reamers, 15° and 75° Nicked Tooth Reamers,
pilot stems in standard sizes and oversizes. Net price complete, \$82.50.

Your Jobber Sells It Albertson & Co.,
Sioux City, Ia.

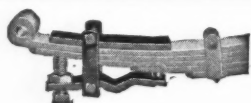


SWAP a postage stamp for
thousands of dollars worth of
real facts on Car Washing. Send
for your free copy of the hand
book.

MANLEY MFG. CO.

FREE

York, Pa., U. S. A.

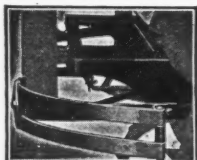


The
SUPERIOR REBOUND CONTROL
adds riding comfort to the car and greatly
prolongs its life.
See our Full Page Advertisement in the
February 16th Issue.

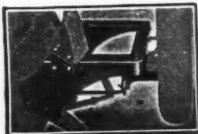
SUPERIOR REBOUND CONTROL, Inc.

2905 60th Street

Kenosha, Wis.



**"Bellevue"
Side-Plate
Trunk
Carriers**
*Most efficient
for all Cars*



The Bellevue Mfg. Co.

Bellevue, Ohio

NEXT WEEK

—is the time to read next week's issue of **MOTOR AGE**, as you are reading this week's issue this week

MOTOR AGE

Chestnut and 56th Sts.

Phila., Pa.

FOLLETT'S NEW MODEL TIME STAMP

accounts for every labor minute



Learn the inter-
esting details
from our de-
scriptive data.

Prints the year, month, day, hour,
minute, A.M. or P.M. at the exact
moment the plunger is pressed—like
this, for example:

NOV 19 1920 4 31 PM

Tells when a job is started—and when it is
finished. There can be no dispute over the
time charge.

Absolutely automatic — except for winding.
Every machine guaranteed.

Follett Time Recording Co., 217 High Street, Newark, N.J.
"Established Since 1904"

HUTTO MODEL "A" THREE CYLINDER GRINDER

HUTTO ENGINEERING CO., INC.
519 Lyncaste Ave. — Detroit, Mich.

\$33

free
write for
your copy

**The Book
"AIR PROFITS"**
Shows how to get
more work out of
an air compressor.
How to use com-
pressed air for
many pay jobs.

BRUNNER MFG. CO.
UTICA NEW YORK

BRUNNER
AIR COMPRESSORS

Weidenhoff Shop
Equipment
for Battery and
Electrical Service
4358 Roosevelt Road Chicago, Illinois

JOHNSON

Every Johnson Quality Bronze Bushing produced
today must safeguard a most enviable reputation
gained thru a quarter century of successful operation.
Johnson Bronze Co., New Castle, Pa.

**BUSHINGS - BARS
- BEARINGS**

**R.I.V. Means Quality
in Every Language**



250 West 57th Street

New York City

To locate business opportunities
To sell, rent, exchange or buy
To find men or employment

**THE CLASSIFIED DEPARTMENT
WILL HELP YOU**

CLASSIFIED

MOTORS: New General Electric 1/4 H.P.,
\$11.90; 1/2 H.P., \$27.75; 1 H.P., \$38.50; 8
Volt Charging Generators \$10. Grinders, Drill
Presses, etc. New catalog. Special discounts.
MOTOR SPECIALTIES CO., Crafton, Pa.

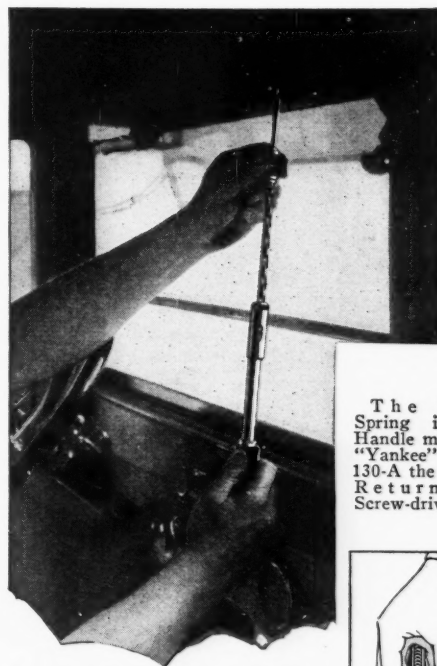
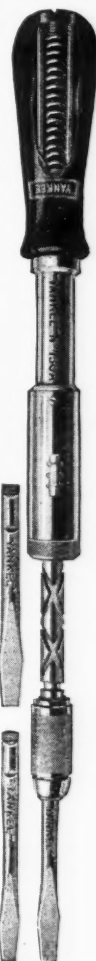
**CLASSIFIED ADVERTISEMENTS
IN "MOTOR AGE" ALWAYS BRING
RESULTS.**

INDEX TO THE ADVERTISEMENTS

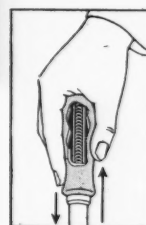
The Advertisers' Index is published as a convenience, and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

A		J	
AC Spark Plug Co....	75	Johnson Bronze Co....	82
Ackerman - Blaesser-Fezzey, Inc.	82	K	
Albertson & Co.....	82	Kellogg Mfg. Co.....	68
Alvord-Polk Tool Co..	3	L	
Ames Co., B. C.	77	Landis Engineering & Mfg. Co.	62-63
Arrow Head Steel Products Co.	71	Lange Machine Works, Henry G.	81
B		M	
Bear Mfg. Co.....	80	Manley Mfg. Co.....	82
Bellevue Mfg. Co.....	82	Motor Age	4
Black Mfg. Co., Inc., J. C.	79	Motor Wheel Corp., Back Cover	
Brewer-Titchener Corp.	79	N	
Brunner Mfg. Co.....	82	Nash Motors Corp....	6
Budd Mfg. Co., E. G..	70	New Departure Mfg. Co.	7
C		North Bros. Mfg. Co..	83
Carter Carburetor Co..	74	O	
Chevrolet Motor Co., 3rd Cover		Oakite Products, Inc..	81
Chrysler Sales Corp..	66-67	P	
Classified Advertising Section	82	Peatross & Arthur....	80
Curtis Pneumatic Machinery Co.	73	Peck Spring Co.....	79
E		Perfect Circle Co., 2nd Cover	
Eclipse Machine Co....	2	Pickard Trunk Co.....	8
Elcar Motor Co.....	1	Protex-A-Motor Mfg. Co.	81
F		R	
Follett Time Recording Co.	82	Ren Mfg. Co.	81
Fredericks Co., H. M..	84	R.I.V. Co.	82
		Ruby Chemical Co....	81
G		S	
General Motors Corp..	64-65	Storm Mfg. Co.	77
Graham-Paige Motors Corp.	57-58-59-60	Studebaker Corp. of America	5
		Superior Rebound Control, Inc.	82
H		T	
Houde Engineering Corp.	61	Trainer National Spring Co.	76
Hudson Motor Car Co., Front Cover		V	
Hunt & Moore, Inc....	79	Velie Motors Corp....	72
Hutto Engineering Co., Inc.	82	W	
Hydraulic Brake Co....	55	Warren Tool & Forge Co.	69
I		Weidenhoff, Joseph ...	82
Ideal Clamp Co.....	81	Woolf, Lawrence E....	81

"YANKEE"
No. 130-A
Quick-Return
Spiral Ratchet
Screw-driver.
Price \$3.45.



The Live Spring in the Handle makes "Yankee" No. 130-A the Quick-Return Spiral Screw-driver.



Up or Down is the same to this world-famous "Yankee" Spiral Screw-driver, No. 130-A. Just push! The spring in handle, with the "Yankee" Spiral, does the work for you—and saves your time.

Make Sure You Get a Genuine "YANKEE"

Be certain—Look for "YANKEE" on the tool. That is important because it is your protection against imitations.

The name "YANKEE" on a tool means the best tool of its kind on earth. Each "Yankee" part is made only of the finest material and finished with "Yankee" precision. The ingenuity of "Yankee" design is unequalled. "Yankee" Tools are cheapest in the end because of their stability. They stand up for years under hard service.

Drive screws the quick, easy way. Use "Yankee" Spiral Ratchet Screw-drivers.

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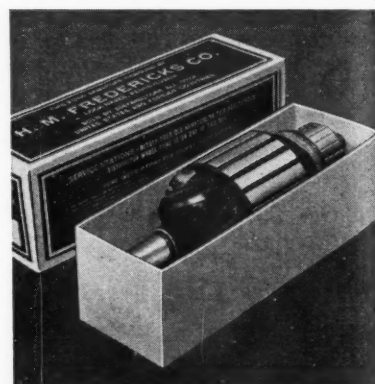
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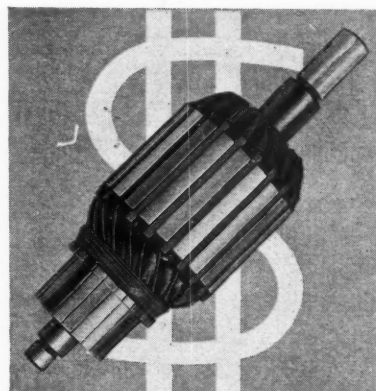
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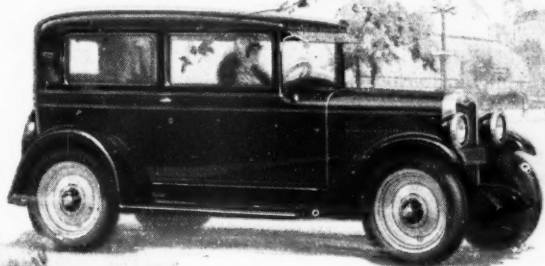
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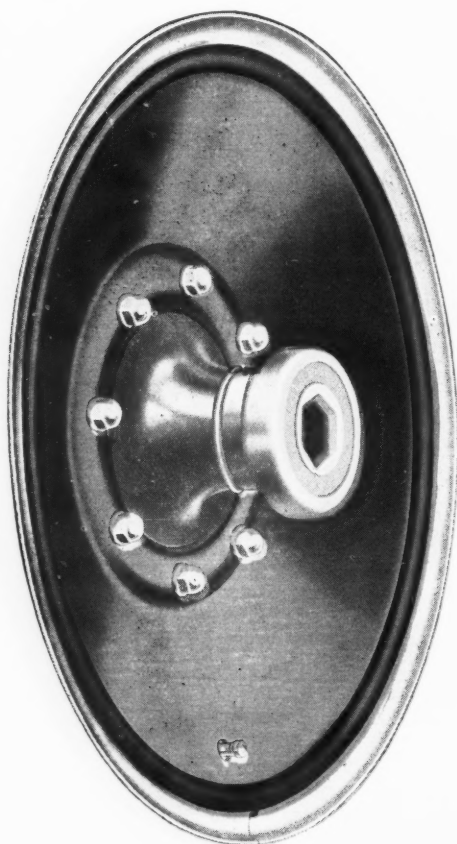
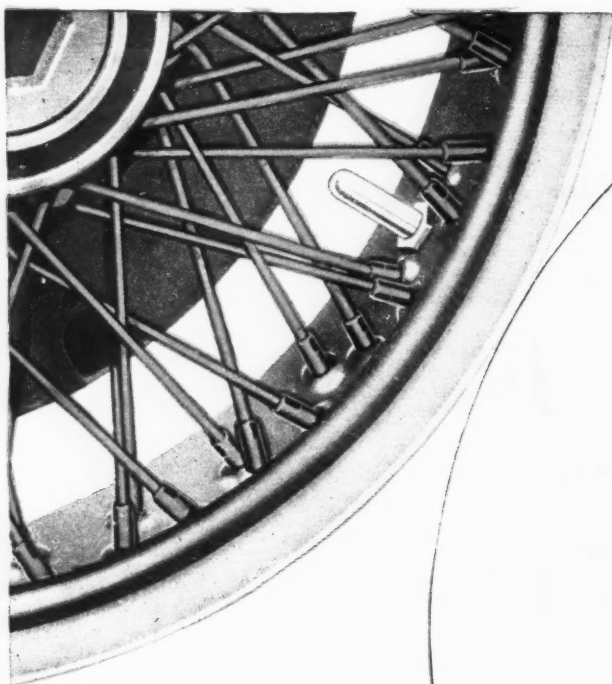
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